

SLOBODIN, B.V.; FOTIYEV, A.A.

Phase diagram of the Na_2O - V_2O_5 system. Zhur. prikl. khim.
38 no.4:801-806 Ap '65. (MIRA 18:6)

1. Institut Khimii Ural'skogo filiala AN SSSR.

SLOBODIN, V.

In the Department of Economic Research of the Urals Branch
of the Academy of Sciences of the U.S.S.R. Vop.ekon.
no.8:159-160 Ag '60. (MIRA 13:7)

1. Zavednyushchiy otdelom ekonomicheskikh issledovaniy
Ural'skogo filiala Akademii nauk SSSR.
(Ural Mountain region--Collective farms--Income distribution)
(Ural Mountain region--Power resources)

SLOBODIN, V.G., inzh.

Semiautomatic machine for the circumferential hardening of the teeth of the driven pinion of the TE3 diesel locomotive. Mashinostroenie no.3:55-58 My-Je '62. (MIRA 15:7)

1. Luganskiy zavod imeni Oktyabr'skoy revolyutsii.
(Steel--Hardening) (Diesel locomotives)

TERENT'YEV, M.L.; OSAD'KO, M.P.; BRAGINSKIY, B.I.; SLOBODIN, V.M.; FISHMAN,
Z.A.; LEVIN, I.Ye.; TSYNKOV, M.Yu.; RADIR'YAN, G.G.; TYUTIN, V.A.;
ABRAMOV, V.A.; FRAYER, S.V.; KOBCHIKOVA, I.A.; KARNAUKHOVA, Ye.I.;
OBOLINSKIY, K.P.; IL'IN, S.A.; GAVRILOV, V.I.; FREYDMAN, S.M.;
KALASHNIKOVA, V.S., redaktor; LAPIDUS, M.A., redaktor; RAKITINA,
Ye.D., redaktor; FEDOTOVA, A.F., tekhnicheskiy redaktor

[Manual for students of collective farm economy] V pomoshch'
izuchaiushchim ekonomiku kolkhov. Moskva, Gos. izd-vo selkhoz.
lit-ry, 1956. 423 p. (MIRA 10:1)
(Collective farms)

AVERKIYEV, A.S., red.; AGEYEV, Ya.P., dots., otv. red.; AREF'YEV, V.A., dots., kand. ekon. nauk, red.; DEMIDOV, S.F., akademik, red.; KARSHIN, V.Ye., dots., red.; KOGAN, A.Ya., starshiy prepodav., red.; MAKHALOV, V.I., starshiy prepodavatel', red.; PITAYEVSKIY, P.I., prof., red.; SLOBODIN, V.M., prof., red.; SHOLOKHOV, Ye.I., red.

[Problems in the new system of agricultural planning] Voprosy novogo poriadka planirovaniia sel'skogo khoziaistva; trudy. Kuibyshev, Kuibyshevskii planovoi in-t, 1961. 419 p. (MIRA 15:12)

1. Mezhvuzovskaya nauchnaya konferentsiya, Kuibyshev, 1960.
2. Zamestitel' predsedatelya Kuybyshevskoy oblastnoy komissii (for Averkiyev).
3. Kuybyshevskiy planovyy institut (for Ageyev, Makhalov, Karshin).
4. Deystvitel'nyy chlen Vsesoyuznoy akademii sel'skokhozyaystvennykh nauk imeni V.I.Lenina i Moskovskaya ordena Lenina sel'skokhozyaystvennaya akademiya imeni K.A.Timiryazev (for Demidov).
5. Ural'skiy filial Akademii nauk SSSR (for Slobodin).
6. Zamestitel' nachal'nika otdela sel'skogo khozyaystva i zagotovok Gosudarstvennogo planovogo komiteta Soveta Ministrov RSFSR (for Sholokhov).

(Agricultural policy)

SLOBODIN, V.M.; IVANYUK, Yu.I.; KUZOVLEV, P.M.; NAGAYEV, Yu.A.; LUPAREVA, T.F.;
MESHCHANINOV, S.I.; BRYUKHOV, Yu.A.; SYCHEVA, F.A.; KOSYAKOV, P.O.,
red.; ZANOVA, N.N., red. izd-va; TAMKOVA, N.F., tekhn. red.

[Distribution and specialization of agriculture in Chelyabinsk
Province] Razmeshchenie i spetsializatsiia sel'skogo khoziaistva
Cheliabinskoi oblasti. Sverdlovsk, AN SSSR, 1963. 204 p.
(MIRA 16:12)

1. Akademiya nauk SSSR. Ural'skiy filial, Sverdlovsk. Otdel
ekonomicheskikh issledovaniy.
(Chelyabinsk Province--Agriculture--Economic aspects)

ZAGORSKAYA, N.G.; YASHINA, Z.I.; SLOBODIN, V.Ya.; LEVINA, F.M.;
BELEVICH, A.M.; URVANTSEV, N.N., doktor geol.-mineral. nauk, red.

[Marine Neogene(?)—Quaternary sediments in the lower Yenisey
Valley.] Morskie neogen (?)—chetvertichnye otlozhenia
nizhnego techenia reki Eniseia. Moskva, Nedra, 1965. 90 p.
(Leningrad. Nauchno-issledovatel'skii institut geologii
arktiki. Trudy, no. 144) (MIRA 18:8)

SLOBODIN, Ya.M.; MAYOROVA, V.Ye.; SMIRNOVA, A.M.

Thermal degradation of ethylene-propylene rubber. Part 1:
C₂ - C₆ hydrocarbons in the products of thermal degradation
of ethylene-propylene synthetic rubber. Vysokom. soed. 6
no.3:541-544 Mr'64. (MIRA 17:5)

1. Severo-zapadnyy zaochnyy politekhnicheskiiy institut.

ca

Isomerization of hydrocarbons of the diallyl series under the influence of silicates. S. V. Lebedev and Ya. M. Slobodin. *J. Gen. Chem.* (U. S. S. R.) 4, 23-30 (1934); cf. *C. A.* 19, 1555; 26, 4255.—By thermal decompn. of diallyl and diisobutylene (I) with activated floridin were obtained the same products of isomerization as by the action of alc. alkalis (Favorskil, *J. Russ. Phys.-Chem. Soc.* 19, 414, 653 (1887); 23, 283 (1891)). A yield of 41.5% dipropenyl resulted by 6 recirculations of diallyl at 225° and a velocity of 0.3-0.4 g. per min. through a reaction chamber 10 mm. in diam. and 15 cm. in length charged with floridin activated at 325°. Under similar conditions I passed once at 205-10° and a velocity of 0.4-0.45 g. per min. gave 70% diisocrotyl. The isomerization is accompanied by a partial polymerization of the formed hydrocarbons with conjugated double bonds. I was prepd. from 1,2,3-tribromoisobutane (II) by the Grignard reaction (Krestinskii and Krivorot'ko, *C. A.* 7, 3944). A yield of 20% pure II was obtained from isobutylene and Br₂ at 0° (Pogorzelskii, *J. Russ. Phys.-Chem. Soc.* 36, 1468 (1904)), while at 10° resulted a mixt. of 58.6% I and 41.4% Me₂CBrCHBr (III), and at 40° 26.6% I and 73.4% III. III gives diisocrotyl by the Grignard reaction.

Chas. Blanc

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

PROCESS AND PROPERTIES INDEX																									
<p>Isomerization of allene hydrocarbons with silicates.</p> <p>1. Isomerization of unsymmetrical dimethylallene under the influence of floridin. Ya. M. Shubashin. <i>J. Gen. Chem.</i> (U. S. S. R.) 4, 778-82(1964); cf. C. A. 28, 5690. $\text{Me}_2\text{C}=\text{C}=\text{CH}_2$ (I), b. 30-40.5°, was obtained in 40% yield from iso-AmOH by following the method of Ipat'ev (<i>J. Russ. Chem.-Phys. Soc.</i> 36, 62(1961)). I was passed at 215°, 232°, 290° and 334° through a glass tube of 15 mm. diam. and 22 cm. length filled with floridin activated at 325°. Conclusions: Under the influence of floridin I is isomerized into a mixt. of isoprene and $\text{Me}_2\text{C}(\text{CH}_3)\text{CH}=\text{CH}_2$ (II). With increasing temp. the formation of isoprene is increased up to a max. of 50% at 290°. At higher temps. up to 334° the content of isoprene is unchanged, because the velocity of its formation is equal to that of polymerization. The process is evidently irreversible. With increased temp. the content of II is rapidly increased up to 60% at 334°. The reaction is reversible. Under the influence of floridin a partial polymerization of the hydrocarbons takes place, the chief product being the dimer of isoprene.</p> <p>Chas. Blanc</p>																									
<p>ASH S. A. METALLURGICAL LITERATURE CLASSIFICATION</p>																									

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PROCESSES AND PROPERTIES INDEX

1. Isomerization of alkene hydrocarbons with activation.
 II. Isomerization of methylallene under the influence of floridin. Ya. M. Shkaptin, *J. Gen. Chem.* (U. S. S. R.) 8, 48 82(1935); *cf. C. A.* 20, 2145. An improved method for the prepn. of $\text{MeCH}:\text{C}:\text{CH}_3$ (I) was developed. Crotonyl alc. with 2 mols. of Br_2 at -20° gave $\text{MeC}(\text{HBr})_2\text{CH}:\text{CH}_2$; this with red P and Br_2 produced $\text{MeC}(\text{HBr})_2\text{CH}:\text{CH}_2$, b. 94° , d. 2.1855 , d. 2.1507 ; the latter distd. with pump. KOH at 120° in an oil bath at 15 mm. pressure gave 85% $\text{MeC}(\text{HBr})_2\text{CH}:\text{CH}_2$, b. 100.5° , which, treated in alc. with Zn dust (Gustavson, *J. Russ. Phys.-Chem. Soc.* 23, 97(1901)), gave 86% I, b. 17.18° . I was passed at 205° , 245° and 330° over activated floridin as was described before. I is more stable than $\text{Me}_2\text{C}:\text{C}:\text{CH}_3$. The isomerization begins only at 205° with 75.5% of unchanged product at 330° . The chief product of isomerization is divinyl. At 330° the light hydrocarbons contain 20.6% divinyl. The formation of $\text{R}(\text{C}:\text{CH})_2$ be-

gins at 205° , increasing to 3.4% at 245° and 3.9% at 330° . No formation of $\text{MeC}:\text{C}:\text{Me}$ could be detected. The products of isomerization showed no traces of dimers of divinyl and I.
 Chas. Blanc

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/ Dimerization of divinyl. Ya. M. Skobodin. *J. Gen. Chem.* (U. S. S. R.) 9, 1815-20(1935).—A condensate obtained in the synthesis of divinyl (D) by the Lebedev method (*J. Russ. Phys.-Chem. Soc.*, 62, 720(1910); C. A. 9, 708) by catalytic decompn. of alk. at 425°, was fractionated and the fractions, b. 108-110°, 130° 2" and 134-40°, were investigated. The preliminary results show that the polymerization of I at 400-25° in the presence of a dehydrogenating catalyst gives a dimer of I, CH₃CH=CH:CH:CH₃, and the end product, p-xylene containing some PhMe and PhCH=CH₂. Chas. Blanc

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<div style="position: absolute; top: 10px; left: 10px; font-size: 2em;">BC</div> <div style="position: absolute; top: 10px; right: 10px; font-size: 1.5em;">U-3</div> <div style="position: absolute; top: 300px; left: 300px; text-align: center;"> <p>Determination of diallyl and dipropenyl in their mixtures by the hydrogenation method. J. M. Szwarc (J. Chem. Phys., 1935, 3, 1830—1833).—Dipropenyl (I) undergoes hydrogenation only after complete saturation of diallyl (II); the composition of (I)-(II) mixtures can be determined from velocity of hydrogenation data. R. T.</p> </div>																																																			
<div style="display: flex; justify-content: space-between;"> <div> <p>OPEN</p> <p>MATERIALS INDEX</p> </div> <div> <p>ASS. S.L.A. METALLURGICAL LITERATURE CLASSIFICATION</p> </div> <div> <p>1ST ORDER</p> </div> </div>																																																			
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Determination of diallyl and biisoprenyl in mixtures by the method of hydrogenation. Ya. M. Mikhlin. *J. Gen. Chem.* (U. S. S. R.), 30, 1959, 2, 1960. Satisfactory results, obtained in the detn. of diallyl and biisoprenyl in a mixt. by the hydrogenation method of Lebedev (*J. Russ. Phys.-Chem. Soc.*, 59, 1981 (1927); 60, 791 (1928)), are shown by graphs and tables. (Chem. Abstr.)

ASTM A54 METALLURGICAL LITERATURE CLASSIFICATION

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

Comparison of the polymerizing and adsorbing properties of silicates. Ya. M. Sloboidin. *J. Applied Chem.* (U. S. S. R.) 8, 35-37 (1955). The following silicates were investigated: (1) Silica gel prepd. by the Sachanen method (*Azerbaidzhan'skoe Neftynoe Khozaystvo* 1925, No. 5, 41); (2) "trass" from Karadaga (Crimea) composed of SiO_2 71.42, Al_2O_3 10.24, Fe_2O_3 0.96, MnO 0.16, CaO 2.12, MgO traces, K_2O + Na_2O 3.46, CO_2 0.12, SO_2 0.85 and H_2O 2.35%; (3) fuller's earth composed of SiO_2 55.28, Al_2O_3 + Fe_2O_3 21.05, CaO + MgO 4.29, K_2O + Na_2O 1.80 and H_2O 17.88%; (4) "kil" from Simferopol contg. SiO_2 49.92, Al_2O_3 22.09, Fe_2O_3 0.28, FeO 0.32, CaO

2.9% MgO 0.87, CO_2 0.30 and H_2O 22.68%; (5) Ginkhor kudin (yellow) contg. SiO_2 48.05, Al_2O_3 37.32, Fe_2O_3 0.27, CaO 0.08 and H_2O 13.28%. The polymerization powers were investigated with isobutylene and the adsorption properties with gasoline, kerosene and gas oil. The polymerizing ability of the silicates is highest at an activation temp. of 300-325°, and an activation temp. below 300° and above 600° does not cause polymerization. The ability of the silicates to effect polymerization depends evidently also upon inner structural changes caused by heating. Silica gel does not cause polymerization. Silicates characterized by high polymerizing powers have also higher adsorption powers. The adsorption power does not seem to depend upon the activation temp. within the range 300-600°.

A. A. Borhtlingk

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Isomerization of cyclic hydrocarbons with an isolated system of double bonds. Ya. M. Skolodin. *J. Gen. Chem.* (U. S. S. R.) 6, 129 (1931). After passing 1-ethyl-3-cyclohexene (I) over floridin at 210-40°, the n_D had increased and the reaction products with $C(NO_2)_4$ had changed from yellow to blond-red. The products from I were examd. on the hypothesis that the 2 double bonds of I would tend to approach each other to form a conjugated system, and the formation of 1-ethylidene-2-cyclohexene (II) was established. It was shown that 1-ethyl-2-cyclohexene, 1-ethyl-1-cyclohexene, 1-ethylidene-3-cyclohexene and 1-ethyl-1,3-cyclohexadiene were absent, but it seems likely that some product intermediate between I and II should be formed, since a similar isomerization of limonene (III) gave isolimone (1-methyl-4-isopropenyl-2-cyclohexene) (IV). The products of isomerization of III gave a red color with $C(NO_2)_4$, (III) gave yellow, were optically inactive, and had a decreased n_D , p , n and d . Fractional distn. of 10 g. gave (A) 4.5 g., b. 108-72°, (B) 0.5 g., b. 180-4°, (C) 5.0 g., b. 195-8°. A and B did not react with maleic anhydride nor did they show an exaltation. A resembles the IV of Chugaev (*J. Russ. Phys.-Chem. Soc.* 19, 414, 553; 23, 283). It has d_4^{20} 0.8361, n_D^{20} 1.46863, and gave no cryst. nitroschloride or tetrabromide. The structure of A was confirmed by oxidation to α -acetyl- α' -methylisobutyric acid (VIII). B had d_4^{20} 0.850 and was probably terpinolene. The absence in the isomerization products of III of the expected isoterpinolene (1-methyl-4-isopropylidene-2-cyclohexene) (V) and the high percentage (50%) of polymerized product is to be explained by the strong tendency of V, which was probably the end product of the isomerization process, to polymerize. I isomerized with difficulty when passed through the 10 mm. diam. hard glass tube at 0.5 g./min. over 15 cm. of floridin, so that it was necessary to pass it several times, each time removing by distn. the product which b. above 130°. Two fractions, one b. 130-4° (n_D^{20} 1.46841) and another b. 134-7° (n_D^{20} 1.47067) were combined and oxidized with $KMnO_4$ in $AcMe$ to give 1- α -hydroxyethylcyclohexane-1,2,3-triol (VI), m. 48° (from Et_2O), in approx. 50% yield. VI boiled with $K_2Cr_2O_7$ and H_2SO_4 for 6 hrs. gave α -ketoadipic acid and a neutral substance, m. 52-4°, difficultly sol. in H_2O , cold sol. and Et_2O . The fraction b. 130-7° reacted vigorously on the water bath with maleic anhydride. No pure products were isolated, but the acid obtained after treatment with Na_2CO_3 and H_2SO_4 gave a Ag salt with the calcd. Ag content. The fraction A from III with $KMnO_4$ in $AcMe$ gave a tetraol (VII), m. 51-3°. VII with CrO_3 mist. gave VIII. III isomerized much more readily than I, only 1 passage over floridin being necessary. Lewis W. Butz

A.S. S.A. METALLURGICAL LITERATURE CLASSIFICATION

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Isomerization of allene hydrocarbons with allenes.

III. Isomerization of tetramethylallene. Ya. M. Slobodin. *J. Gen. Chem.* (U. S. S. R.) 6, 1808-14 (1938); cf. *C. A.* 29, 4732. Pure tetramethylallene (I) prepared over activated fluoridin, as described before, partially isomerizes to 2,4-dimethyl-1,3-pentadiene (II), which completely polymerizes at the moment of formation. The amt. of polymers formed is 30-40%. Pure II, under the same conditions, isomerizes to 44.9% I, and is the 1st definitely proven instance of transition of a conjugated system to one with adjacent unsats. Polymers, obtained in 65-70% yield, are almost exclusively a dimer, b.p. 138-40°, d₄²⁰ 0.8418, n_D²⁰ 1.47432, differing from the dimers of Merezhkovskii (*C. A.* 8, 1421) and of Grignard (*Ann. chim. phys.* [7], 26, 477 (1901)). An improved method for the prepn. of I is described. Me₂(iso-Bu)-COH heated with (CO₂H)₂ at 130-5° gives 65-70% MeC:CHCHMe₂; this with Br₂ at -10° gives 43.4%

Me₂CHCHBrCHMe₂, b.p. 78 ml.; this with 1 mol. Br₂ at 60° gives 30.5% Me₂CHCHBrCHMe₂, b.p. 121.5°; the latter distd. with powd. KOH at 135-40° and 10 mm. pressure gives 71.3% Me₂C:CHCHBrMe₂, b.p. 141.7°, which, treated in 85% alc. with Zn dust, gives 42% I, b. 82-4°, d₄²⁰ 0.7006, n_D²⁰ 1.40030. II is prepd. from mesityl oxide by a modification of Fellenberg's method (*Rev. 37, 3578 (1914)*). IV. The question of isomerization equilibrium in the system allene-allylene. *Ibid.* 1892 6. Either pure allene (I), prepd. by the procedure of Lebedev (*C. A.* 8, 321), or pure allylene (II), prepd. by treatment of bromopropylene with alc. KOH, when passed over heated fluoridin, undergoes partial isomerization, the degree of isomerization varying almost linearly with the temp. in both cases. The same equil. compn., 61.5% II and 38.5% I, is obtained at 325°, independent of which gas is taken as the starting material. At temps. above 325° polymerization reactions predominate. At a temp. around 325° the attainment of equil. is practically independent of the rate of gas passage (up to 40 ml./min.).

John Livak

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

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Preparation of hydrocarbons of the divinyl series from alcohols. V. P. Krausz and Ya. M. Slobodin, *J. Applied Chem. (U. S. S. R.)* 9, 1278 *Wolfin* (German) 1298 (1930). The behavior of Lebedev catalysts (cf. C. A. 25, 115) used in the conversion of MeOH, PrOH, iso-PrOH, sec-BuOH, as well as mixts. of EtOH and MeOH, EtOH and PrOH, and iso-PrOH and EtOH, carried out by passing the alc. vapors through a glass tube charged with the above catalysts and heated up to 450°, was studied. It was found that MeOH is 80% converted into MeO in the presence of the mixed catalyst contg. 75% of a dehydrogenating component, while HCHO is formed in small amts. PrOH is converted under the above conditions mainly into EtCHO, while propylene is obtained if the catalyst contains 75% of a dehydrating component. The formation of a hydrocarbon $C_{10}H_8$ having a conjugated double bond was also observed to some extent. Iso-PrOH in the presence of the "normal" catalyst (contg. 15-25% of the dehydrating and 75-85% of the dehydrogenating catalyst) forms primarily propylene, although on increasing the temp. to 580° a dehydrogenation and a dehydration take place with the formation of acetone. In the presence of 95% of the dehydrogenating and 5% of the dehydrating component in the catalyst the formation of diene hydrocarbons with conjugated double bonds was observed. In the decuplet of BuOH in the presence of the "normal" catalyst pseudobutylene mainly is formed. MeCOEt is formed only in the presence of a 95% dehydrogenating and 5% dehydrating catalyst. The yield of diene hydrocarbons is in this case still lower than from C_4H_9OH . In the case of a mixt. of alcs. with different location of the OH group, each alc. reacts independently. Alcs. with the same location of the OH group (EtOH and PrOH) form divinyl, bipropenyl and piperylene. The yields of diene hydrocarbons in this case amount to: divinyl 26.2% of the amt. of EtOH, bipropenyl 2.08% of PrOH and piperylene 16.7% of the EtOH and 11.1% of the amt. of C_4H_9OH passed through the catalyst. A. A. Nordtink

A. A. Hochtlingk

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The isomerization of allene hydrocarbons with silicates
V. The isomerization of *tert*-butyllallene. Ya. M.
Slobodan, *J. Gen. Chem.* (U. S. S. R.) 7, 1034-7(1037);
cf. *C. A.* 51, 4204⁹⁵. When *tert*-butyllallene is passed
over thoria at 250-5°, the 1st product is 2,4-dimethyl
1,3-pentadiene, but this is unstable under these conditions
and rearranges completely, so that the final product is
tetramethylallene. H. M. Leicester

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COMMON ELEMENTS

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The isomerization of allene hydrocarbons by silicates.

VI. The isomeric changes of C₃H₂ hydrocarbons. Ya. M. Slobodin. *J. Gen. Chem.* (U. S. S. R.) 7, 2376-80 (1937); *Ch. C. A.* 31, 8501¹⁸.—When EtC:CH is isomerized over floridin at 275° the 1st step is the reversible formation of MeCH:C:CH₂. Part of this reacts further to bivinyl and no MeC:CHMe is formed. When the latter compd. is isomerized, it goes directly to EtC:CH without intermediate allene formation. These reactions are probably general for such hydrocarbons. H. M. L.

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The isomerization of allene hydrocarbons by silicates.

VI. The isomeric changes of C₃H₂ hydrocarbons. Ya. M. Slobodin. *J. Gen. Chem.* (U. S. S. R.) 7, 2376-80 (1937); *Ch. C. A.* 31, 8501¹⁸.—When EtC:CH is isomerized over floridin at 275° the 1st step is the reversible formation of MeCH:C:CH₂. Part of this reacts further to bivinyl and no MeC:CHMe is formed. When the latter compd. is isomerized, it goes directly to EtC:CH without intermediate allene formation. These reactions are probably general for such hydrocarbons. H. M. L.

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<p>Isomerization of diallyl. J. M. SLODIN (J. Gen. Chem. Russ. 1955, 8, 188-189).—Levin's conclusion that Al_2O_3 is a more active catalyst of isomerization of diallyl than is Borik (A., 1955, II, 48) is questioned. H. T.</p>																			
ASB-3LA METALLURGICAL LITERATURE CLASSIFICATION										C-277-100, 1000									
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<p>PROCESSES AND METHODS INDEX</p> <p>The dehydration of β-alkylallyl carbinols. Ya. M. Nebel'din. <i>J. Gen. Chem.</i> (U. S. S. R.) 38, 241 (1968) (English 254) (1968). When $\text{Me}_2\text{C}(\text{OH})\text{CH}_2\text{CH}_2\text{CH}_3$ is dehydrated by heating with H_2SO_4 or $(\text{CO}_2\text{H})_2$ or by addn. and removal of HCl, it forms C_6H_{10}, which has been considered to be 2-methyl-1,4-pentadiene. Ozonation shows that only a small amt. of this compd. is present, and most of the reaction product is 1,1-dimethyl-1,3-butadiene (maleic anhydride addn. compd., m. 132-4°). In a similar way, $\text{Et}_2\text{C}(\text{OH})\text{CH}_2\text{CH}_2\text{CH}_3$ gives chiefly 1,1-diethyl-1,3-butadiene (maleic anhydride addn. compd., m. 72-4°), and a little 4-ethyl-1,4-hexadiene; and $\text{Pr}_2\text{C}(\text{OH})\text{CH}_2\text{CH}_2\text{CH}_3$ gives mainly 1,1-dipropyl-1,3-butadiene (maleic anhydride addn. compd. is of high mol. wt.), and some 4-propyl-1,4-heptadiene. However, <i>iso</i>-$\text{Pr}_2\text{C}(\text{OH})\text{CH}_2\text{CH}_2\text{CH}_3$ gives a mixt. contg. 80% 5-methyl-4-isopropyl-1,4-hexadiene and 20% 1,1-diisopropyl-1,3-butadiene (maleic anhydride addn. compd., m. 212° (decompt.)). Thus, dehydration goes according to the Wagner-Zaitsev rule, and the existing double bond in the mol. directs the reaction toward the formation of a conjugated system.</p> <p>W. M. Leicester</p>																																																			
<p>ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION</p>																																																			

10

Ca

Dihydrothiophene. Ya. M. Slobozin. *J. Gen. Chem.* (U. S. S. R.) 8, 714-18(1938).--The interaction of 1,4-dithione-2-butene and cryst. Na_2S in 10-5% alc. formed no *dihydrothiophene* (I) but gave bivinyl and a highly polymerized elastic product (II) resembling vulcanized rubber (insol. in org. solvents, slow swelling in C_{11}H_8 , etc.). The reaction in 70% alc. produced traces of I, smaller amts. of bivinyl and II, and considerable liquid polymerization product (III). In 50% alc. the chief reaction product was III, 10% I and no bivinyl and II. III is an extremely fetid substance and is probably a mixt. of $\text{S}(\text{CH}_2\text{CH}=\text{CH}\cdot\text{CH}_2)_n\text{S}$ and higher polymers. II was extd. from the distn. residue with Et_2O and purified by distn. over Na. II, b. 103-5°, d_4^{20} 0.978, n_D^{20} 1.4813, M. R. 25.00 (calcd. 25.02). It gives a HgCl_2 compl., m. 92-4°, and a MgI_2 compl., m. 122-3°. Chas. Blane

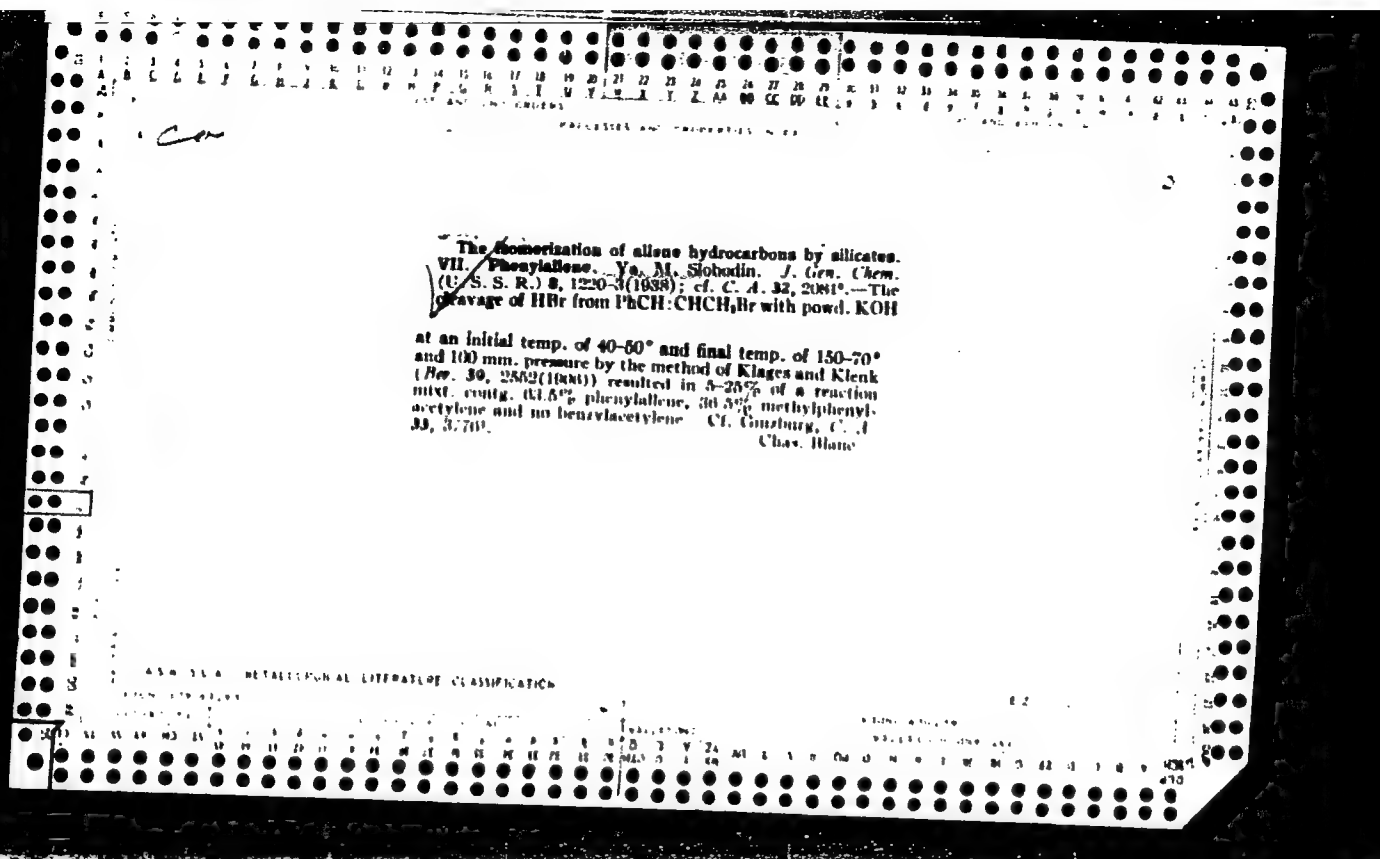
ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

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ca

Dehydrogenation of 1-vinyl-3-cyclohexene. Ya. M. Slobodin and P. N. Krasnobayeva. *J. Gen. Chem.* (U. S. S. R.) 8, 738-9 (1938).—Passing 1-vinyl-3-cyclohexene (I) at the rate of 0.2 g./min. over Ni deposited on Al₂O₃ at 300–20° produced up to 84% PhEt and traces of styrene. The gaseous reaction products contained no CH₄ and other hydrocarbons. I, b. 129–30°, n_D²⁰ 1.4639, was prepd. by polymerization of 1,3-butadiene (Lebedev and Skavronskaya, *C. A. B.*, 835). The presence of styrene in the catalyze suggests that PhEt is formed by hydrogenation of the intermediate styrene and not by preliminary isomerization of I to ethylcyclohexadiene and dehydrogenation of the latter to PhEt. Chas. Blanc

ASM-51A METALLURGICAL LITERATURE CLASSIFICATION



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BC																				R-3									
<p>Isomerization of allene hydrocarbons in presence of silanes. VIII. Isomerization of α-phenyl-Δ^2-butadiene and α-phenyl-Δ^2-butadiene. J. M. Shostakov (J. Gen. Chem. Russ., 1930, 9, 272—276). — $\text{CH}_3\text{Ph-CH=C=CH}$ (I) is very stable in presence of floridin at 280°, only small amounts of $\text{CH}_3\text{Ph-CH=C=CH}$ (II) being found in the condensate. $\text{CH}_3\text{Ph-CH-CH=CH}$ (III) yields chiefly (I) with floridin at 280°. The processes are represented: (I) \rightleftharpoons (II) \rightleftharpoons (III), the stability of the products falling in the order given. R. T.</p>																													
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COMMON ELEMENTS										PROCESSING AND PROPERTIES INDEX										IMP AND 9TH PROPS									
<p>BC</p> <p style="text-align: right;">a-3</p> <p>Synthesis of vitamin-A. M. V. Krivos and J. N. Kabanov <i>J. Gen. Chem. Russ.</i> 1940, 10, 897-898. — Anisophthal prepared from β-benzylsuccinic anhydride (I) and $\text{CH}_3\text{CH}_2\text{CHO}$ (method: Kabanov et al., A., 1939, 11, 200) is biologically in- active. β-ionone and $\text{FOH(CH}_2\text{CH}_2\text{Me)}$ in Et_2O (6 hr. at the b.p.) give (II) in 80-85% yield. R. T.</p>																													
<p>Materials Index</p> <p>All-Union Sci-Res. Vitamin Inst.</p>																													
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<p><i>2a</i></p> <p>1ST AND 2ND COPIES</p> <p>PROCESSES AND PROPERTIES INDEX</p> <p>10</p> <p>The hydroxy analog of aneurine (vitamin B₃): Ya. M. Stobolin and M. S. Ziegel. <i>J. Gen. Chem. (U. S. S. R.)</i> 11, 1019-22 (1941). - The HO analog of vitamin B₃, with NH₂ replaced by OH, was prepd. by method similar to those used for the prepn. of B₃ itself and found to possess 0.5% of the aneurine activity of the latter. - Et 2-methyl-4-hydroxy-5-pyrimidineacetate (I), m. 170-1°, was obtained in 70% yield by the interaction of the crude product obtained from 30 g. (CH₃CO₂Et)₂, 18 g. HCO₂Et and 4.5 g. Na in abs. ether with 19.5 g. MeC(=NH)NH₂·HCl in 90% alc.; HCl salt, m. 250°. - 2-Methyl-4-hydroxy-5-pyrimidineacetamide (II), crystals from 75% MeOH, m. 242°, was obtained by treating I with 25% aq. NH₃; picrate, m. 210-12°. On treatment with Br and NaOH, II is converted to 2-methyl-4-hydroxy-5-(aminomethyl)pyrimidine (III); HCl salt, needle crystals from alc., m. 280°; picrate, m. 292°. - 2-Methyl-4-hydroxy-5-(hydroxymethyl)pyrimidine (IV), was obtained by treating III with NaNO₂ + HCl; HCl salt, m. 255-8°. - 2-Methyl-4-hydroxy-5-(bromomethyl)pyrimidine (V), m. 198-200°. Equal weights of V and of 4-methyl-5-(2-hydroxyethyl)-thiazole were heated together at 110° for 30 min., the residual thiazole washed out with ether, and the 3-[(2-methyl-4-hydroxy-5-pyrimidyl)methyl]-4-methyl-5-(2-hydroxyethyl)thiazolium bromide recrystd. from 80% alc.; 11 m. 183°; the curative dose for pigeons is 0.5 mg.</p> <p>F. H. Rathmann</p>		<p>6-2</p>	
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<p><i>ca</i></p> <p>Vitamin B₁₂. IV. Technical synthesis of 4-methyl-5-(2-hydroxyethyl)thiazole. Va. M. Slobodin, M. S. Zolotarev and M. V. Yanishevskaya. <i>J. Applied Chem. (U.S.S.R.)</i> 16, 2802 (1943); <i>cf. C. A.</i> 38, 2084^g. HCO_2H (1 kg.) cooled to -10° is treated with 2 l. cold concd. NH_4OH (25%); the mixt. is kept at -10° for 4-5 hrs. and heated on a steam bath to remove volatile products; <i>formamide</i> is then collected by distn. <i>in vacuo</i>, b_p 114°, n_D^{20} 1.4471; yield, 1 kg. The above is treated with 400 g. P_2S_5 gradually to prevent strong overheating of the mixt., after which the <i>formamide</i> is extd. with Et_2O; the solvent is distd. just previously to use; yield, 15-50%. To 1300 g. Ac_2O heated to 110° there is added gradually 1 kg. <i>acetopropyl alc.</i> (reaction temp. rises to 125°) after which the mixt. is heated for 2 hrs. at 140° and the product distd. <i>in vacuo</i>, to yield 600 g. <i>acetopropyl acetate</i>, b_p $100-15^\circ$; in presence of 5-10 cc. pyridine the yield is increased to 1000 g. One kg. of the above in 500 cc. CHCl_3 at 60° on a steam bath is treated with 350 g. Br in 500 cc. CHCl_3, with addn. in several portions of 350 g. chalk for binding the liberated HBr; the regulated addn. takes 7-8 hrs., after which the product is washed with water, filtered, dried and freed of solvent by distn. <i>in vacuo</i>; 1250-1400 g. <i>bromacetopropyl acetate</i> is obtained. To 1250 g. of the above, cooled in ice-water, there is added slowly a soln. of 600 g. HCSNH_2 in 800 g. abs. EtOH, with cooling below 60°; the mixt. is let stand for 12-16 hrs., refluxed for 1-1.5 hrs.; on cooling, the mixt. is addd. with water and extd. with Et_2O; the aq. layer is made alk. with 250 g. NaOH and 1650 cc. EtOH and refluxed on a steam bath for 1-2 hrs., cooled, acidified by HCl, alc. and water are distd. off <i>in vacuo</i> to 0.5 the original vol. and the residue is salted out with K_2CO_3 to yield 200-250 g. 4-methyl-5-(2-hydroxyethyl)thiazole, b_p $138-42^\circ$, d_4^{20} 1.1984, n_D^{20} 1.5440; <i>purate</i>, m. 162°. G. M. Kosolapoff</p>																			
<p>ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION</p>																			

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<div style="display: flex; justify-content: space-between;"> <div style="width: 20%;"> <p>Ca</p> </div> <div style="width: 60%; text-align: center;"> <p>PROCESSES AND PROPERTIES INDEX</p> </div> <div style="width: 20%; text-align: right;"> <p>10</p> </div> </div>																																																																													
<p>Vitamin B₁₂. Concerning 4-methyl-5-(2-hydroxyethyl)-thiazole. Va. M. Stohodan and H. E. Hefins. <i>Doklady Akad. Nauk S. S. R.</i> 39, 162-4; <i>Compt. rend. Acad. sci. U. R. S. S.</i>, 30, 145-7 (1943) (in English).—Reaction of 3-bromo-5-hydroxy-2-pentanone with HCSNH₂, (I) by Buchman's method (cf. C. I. 30, 7572*) leads to the production of 2 closely similar isomeric thiazole derivs., which can be sep'd. by fractional crystn. of their picrates from alc. The original thiazole derivs. can be regenerated by decomp. the picrates with HCl. One picrate (A) m. 162.8° and the other (B) m. 91°. The thiazole deriv. regenerated from picrate A, namely, 4-methyl-5-(2-hydroxyethyl)thiazole, yields pure vitamin B₁₂ by condensation with 4-amino-5-bromomethyl-2-methylpyrimidine (II). The thiazole deriv. (III), from picrate B, reacts with II to form a product which is not vitamin B₁₂. Chem. evidence indicates that III is 4-methyl-5-(1-hydroxyethyl)thiazole. Formation of the latter probably involves isomerization of 5-hydroxy-2-pentanone by HBr to 4-hydroxy-2-pentanone followed by the latter's bromination to 3-bromo-4-hydroxy-2-pentanone, which by condensation with I yields III. J. W. Perry</p>																																																																													
<div style="display: flex; justify-content: space-between;"> <div style="width: 20%;"> <p>ASAC-51A METALLURGICAL LITERATURE CLASSIFICATION</p> </div> <div style="width: 60%; text-align: center;"> <p>8 2 7 2 2 . 3 . 3 . 1 2</p> </div> <div style="width: 20%; text-align: right;"> <p>8 2 7 2 2 . 3 . 3 . 1 2</p> </div> </div>																																																																													
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7

Determination of 4-amino-5-(bromomethyl)-2-methylpyrimidine hydrobromide. Ya. M. Shkudlin, Doklady Akad. Nauk S. S. R. 80, 237 N; Compl. rend. acad. sci. U. R. S. S. R. 200-3(1949)(in English).—All three H atoms in 4-amino-5-(bromomethyl)-2-methylpyrimidine dihydrobromide (I) can be titrated directly by the following procedure: Dissolve about 0.5 g. of I in 50-100 cc. of water. Add 2-3 g. pptd. CaCO_3 and several drops of K_2CrO_4 soln. Titrate with 0.1 N AgNO_3 in the usual way. The same method can be used for direct titration of the halogen atoms in compds. of the general formula $\text{NaO}_2\text{CCH}_2\text{N}(\text{X})\text{CH}(\text{X})\text{R}$, where X is H or I.

J. W. Perry

[illegible]

1ST AND 2ND ORDERS																										100 AND 4TH ORDERS																									
PRECEDENCE AND PRIORITY INDEX																																																			
<p>Extraction of vitamin B₁ from rice. T. E. Pavlovskaya and I. M. Skobodin. <i>Doklady Akad. Nauk S. S. S. R.</i> 41, 255-7(1943).—Recovery of vitamin B₁ (I) from rice by-products was studied. The exptl. extn. method consisted of treating 300 g. of sample with 300 cc. of solvent (either 8% or 70% alc.), filtering, washing the residue with solvent, evap. off the alc. and applying a basic Pb acetate treatment to the aq. soln., which was finally evapd. to 80-100 cc. preparatory to detg. the amt. of I. The 8% alc. was much more effective than the 70% alc. in extg. I from rice germs (II). Grinding II favored extn. of I. Six successive extns. with 8% alc. were required completely to ext. I from II. The amts. of I, obtained from 1 kg. each of rice by-products by complete extn. with 8% alc., were: 70240 γ from II, 600 γ from rice husks and 430 γ from rice bran. J. W. Perry</p>																																																			
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2A

PROCESSES AND PROPERTIES INDEX

10

Interaction of tetramethoxymethane with unsaturated compounds. Va. M. Shkoda. *J. Gen. Chem. (U.S.S.R.)* 18, 1698-700(1946).—A variety of unsatd. compds. were treated with $C(NO_2)_4$, and the color of the adducts was observed. Mono-, di- and trisubstituted ethylenes give a yellow product with most intense color arising from complexly substituted materials, although the *tert*-Bu group decreases the color intensity, as does a tertiary alc. group. Tetrasubstituted ethylenes give light to dark-red colors. Dienes with isolated double bonds and allenes give a yellow color; butadiene gives an intensely yellow color; acetylenes give faint colors. The following colors were obtained with: C_6H_6 , yellow; propylene, yellow; *n*-butylene, yellow; 1-pentene, yellow; $Me_2CCH:CH_2$, light yellow; $CH_2:CHC(OH)Me$, light yellow; allyl alc., orange-yellow; isobutylene, yellow; *para*-substituted, yellow; 2-pentene, yellow; $Me_2C:CHMe$, yellow; crotyl alc., yellow; dimethylpropylethylenes, yellow; cyclohexene, yellow; $Me_2C:CHMe$, light red; $Me_2C:CHMeEt$, light red; $Me_2C:CHMe$, red-brown; bisallyl, yellow; bisbutenyl, yellow; allene, yellow; methyallene, yellow; $Me_2C:C:CH_2$, yellow; *tert*-butylallene, light yellow; $Me_2C:CHMe$, orange-yellow; phenylallene, orange; butadiene, orange; isoprene, orange; piperylene, orange; isopropenyl, orange; bispropenyl, light red; $Me_2C:CHCH:CH_2$, light red; $Et_2C:CHCH:CH_2$, red; $Pr_2C:CHCH:CH_2$, deep red; $(Me_2CH)_2C:CHCH:CH_2$, deep red; bisacetylenyl, deep red; $Me_2C:CHCMe:CHMe$, red; C_6H_6 , yellow; $Me_2C:CH$, yellow; $Me_2C:CHMe$, yellow; $Et_2C:CH$, yellow; $PhC:CH$, yellow; $Me_2CC:CH$, light yellow; $CH_2CC(OH)Me$, colorless.

G. M. Koshlakov

ASS-SLA METALLURGICAL LITERATURE CLASSIFICATION

FROM STIVISIVB

FROM BOMIIV

3

PROCESSES AND PROCEDURES

Slobodin and N. I. Matusevich (Kirov Military Acad. Leningrad). *J. Gen. Chem. (U.S.S.R.)* 16, 2077-82 (1946) (in Russian). Thermal depolymerization of isobutylene rub. gives fragments ranging from the monomer to pentamers; some cracking also occurs. A crystalline was discovered. Tech. Vistanex (M 90,000-100,000) (100-150 g.) was heated to 325° in a distn. app. After depolymerization, the residue never exceeded 6-8%. Analyses of gases showed the presence of 1.3-3.9% satd. hydrocarbons; the unstd. product was isobutylene, while the satd. product apparently was C₄H₈, with some C₃H₆. The liquid portion of the distillate was fractionated to give a series of products, as follows: (1) up to 97°, 2.26%, M 111.1, d₄²⁰ 0.6888, n_D²⁰ 1.4132; (2) 97-106°, 15.17%, M 0.7230, 1.4132; (3) 106-12°, 10%, 120.9, 0.7315, 1.4470, 1.412, 20°, 5.5%, 0.7370, 1.4258; (4) 120-30°, 0.7085, 1.4439; (5) 130-40°, 12.5%, 143, 1.4410; (6) 170-80°, 13.5%, 161.8, 0.7824, 1.4105; (7) up to 75° at 14 mm., 4.3%, 175.5, 0.7859, 1.4118; (8) 75-100°, 1.8%, 183, 0.7809, 1.4150; (9) 100-15°, 10.8%, 220, 0.8120, 1.4560; (10) 115-35°, 2.3%, 231, 0.8238, 1.4038; (11) 135-50°, 0.1%, 258, 0.8319, 1.4071; (12) 150-5°, 1.0%, 252, —, 1.4090. Fractions 6-8 crystd. partially; the isolated crystals were long needles of mol. wt. (Rast) 171.8, m. 65-6°, changing to 83-8° after recrystn. on long heating. Keeping a mixt. of triisobutylene and tetraisobutylene over Na 4 years gave a small amt. of solid resembling the above product but of Rast mol. wt. 188.3; the identity of these products has not been detd.

G. M. Kosolapoff

Polymerization and depolymerization. I. Depolymerization of rubberlike polymers of isobutylene. Ya. M.

Abs. available
D-50054

ASM - SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS																										3RD AND 4TH ORDERS																									
PROCESSING AND PROPERTY INDEX																																																			
<p>Colorimetric determination of nicotinic acid. P. Yu. Rachinskii, Ya. M. Stobolin, and I. N. Shokhov. <i>J. Applied Chem. (U.S.S.R.)</i> 10, 176-9 (1946). Treat 5 ml. of a soln. contg. up to 10 γ of nicotine acid per ml. with 1.8 ml. of a 20% soln. of monochloramine (B or T) and 0.6 ml. of a 5% soln. of KCN. Add water to make up to 10 ml. By means of a phosphate buffer, the pH is made 7.0. At first 2 ml. of the buffer is added and the rest added to the 10-ml. mark in the order given above. Soon after the addn. of KCN, a light yellow color appears, the intensity of which increases rapidly, attaining a max. at 0.0 min. and after that beginning to fade. The reaction is carried out at a temp. not higher than 10°. At higher temp., the color changes rapidly the first few min. and does not permit accurate colorimetry. The optimum ratio of chloramine to KCN has been found to be 3:1.</p> <p style="text-align: right;">J. S. Joffe</p>																																																			
<p>ASB-11A METALLURGICAL LITERATURE CLASSIFICATION</p>																																																			

35 Synth. Rub. + Related
Products

Polymerization and depolymerization. I. Depolymerization of rubber-like polymers of isobutylene. V. M. SLODIN and N. I. MAROSVICH (J. Gen. Chem. U.S.S.R., 1947, 18, 2077-82; Chem. Abn., 1947, 41, 7803).--Viscosity of molecular weight 90,000-100,000 was heated at 200°. The size of the fraction, density, molecular weight, and refractive index are given for 14 fractions. Fragments ranging from the monomer to the pentamer are obtained and some cracking also occurs. 253120.10

SLOBODIN, J. . .

PA 15T56

USSR/Chemistry - Polymers
Chemistry - Catalysis

Feb 1947

"Polymerization and Depolymerization: 2, Catalytic
Thermopolymerization of Divinyl," J. M. Slobodin,
F. Yu. Rachinskiy, 3 pp

"Zhur Obshch Khim" Vol XVII, No 2

The thermopolymerization of divinyl over floridine
leads to the formation of a new series of cyclic
forms.

Abs. available

15T56

D-50054

SLOBODIN, YA. M.

PA 15T74

USSR/Chemistry - Ascorbic Acid
Chemistry - Sorbose

Mar 1947

"Ascorbic Acid, Its Preparation and Properties: III,
The Acetonization of Sorbose," Ya. M. Slobodin, 4 pp

"Zhur Obshch Khim" Vol XVII, No 3

The acetonization of sugars leads to the formation of an equilibrium mixture of mono and diacetone derivatives. Increase of temperature shifted the equilibrium toward the formation of the monoacetone sugars, and a positive influence of metallic Al and Zn on the yields of diacetone sugar derivatives was noted.

15T74

USSR/Chemistry - Aldehydes

Mar 1947

APPROVED FOR RELEASE: 08/25/2000

CIA-RDP86-00513R001651330003-9"

"The Reversibility of the Esteric Condensation of Aldehydes," Ya. M. Slobodin, F. Yu. Rachinskiy, O. D. Avtokratova, 6 pp

"Zhur Obshch Khim" Vol XVII, No 3

The Canizzaro-Tishchenko reaction was found to be reversible. Equilibrium was not established in the system acetaldehyde-ethylacetate due to a number of simultaneous side reactions.

15T90

CA

10

Vitamin B₁. VII. Ethyl 2-methyl-4-hydroxy-5-pyrimidinoacetate. Ya. M. Slobodin and O. I. Avtokratova. *J. Gen. Chem. (U.S.S.R.)* 17, 1377-9(1947)(in Russian); cf. C.A. 36, 6512. The mother liquor after isolation of Et 2-methyl-4-hydroxy-5-pyrimidinoacetate (I) (from the interaction of acetamidine-HCl with Et formylsuccinate) deposits, on standing, appreciable quantities of a product, m. 160-1°, which analyzes identically with I. However, it forms a picrate m. 150-1°, whereas I picrate, m. 147-8°. On the other hand, the new product with NH₃ gives the amide m. 238-40°, identical with the amide prepd. from I; it forms a picrate, m. 208-10°, also identical with the product derived from I. Apparently the present product is another modification, polymorphic or isomeric, of I. The yield is about 47-8% of that of I, thus making the over-all yield of the product 80%.

G. M. Kosolapoff

ASB-51A METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS										3RD AND 4TH ORDERS									
PROCESSES AND PROPERTIES INDEX																			
<p>CA</p> <p>10</p> <p>Polymerization-Copolymerization. III. New divinyl trimer. Ya. M. Shokhin, F. Ya. Rachinskii, and I. N. Shokhor. <i>J. Gen. Chem. (U.S.S.R.)</i> 17, 1650-61 (1947) (in Russian); cf. C.A. 42, 512c.—The previously described divinyl trimer from passage of divinyl over boron at 350-400° is shown to be 1,4,6a,5,8,8a-tetrahydro-1,6-dimethylphthalene, since its dehydrogenation over Ni according to Komarevskii and Zelnikii (C.A. 18, 2885) yields 1,4- and 1,2-dimethyltetrahydronaphthalenes, aromatization being confined to 1 ring only; a possible admixt. is 1,2,4a,5,8,8a-tetrahydro-1,2-dimethylphthalene. The trimer (b.p. 75-100°, d₄²⁰ 0.8873, n_D²⁰ 1.4854) shows 2 double bands (ICI method), gives a deep-red color with C(NO₂)₂ and fluoresces blue in ultraviolet light. Its passage over a Ni catalyst at 300° in a H atm. gave a crude product, d₄²⁰ 0.8829, n_D²⁰ 1.50061, which was sepd. into a fraction b. 200-20°, d₄²⁰ 0.8853, n_D²⁰ 1.50219, and a fraction b. 220-2°, d₄²⁰ 0.9088, n_D²⁰ 1.51624. The latter with 5% KMnO₄ gave phthalic acid. This definitely disproved the possibility of a biphenyl structure of the trimer. G. M. Kosolapoff</p> <p>Abs. available - D-50054</p>																			
ASAC-51A METALLURGICAL LITERATURE CLASSIFICATION																			
1ST AND 2ND ORDERS										3RD AND 4TH ORDERS									

SLOBODIN, YA. M.

PA 52T14

USSR/Chemistry - 1,3-Butadiene
Chemistry - Polymers

Oct 1947

"Rubbery Cyclopolymer of Bivinyll," Ya. M. Slobodin,
F. Yu. Rachinskiy, Mil Med Acad imeni S. M. Kirov, 2 22

"Dok Akad Nauk SSSR" Vol LVIII, No 1

Gives data on experiments in polymerization of bivinyll,
as a result of which, properly constructed polymers
were produced. Below 150° the rubbery cyclopolymer
were accompanied by various amounts of aliphatic forms.
150° and higher, as a result of formation on the cata-
lyzer of a large amount of chains and their frequent
breaking away, polymerization is limited by formation
of polymer forms of comparatively low molecular weight.
Submitted by Academician A.A. Balandin, 14 Mar 1947.
2214

PA 19/49T20

SLOBODIN, YA. M.

UssR/Chemistry - Polymerization, Di- Aug 46
merization
Chemistry - Vinyl Compounds

"Polymerization and Depolymerization: IV, The
Dimerization of Divinyl," Ya. M. Slobodin, F.
Yu. Bakhinskij, I. N. Smolnor, M.I. Aced Ismael
S. M. Kirby, 3 pp

"Zhur Obshch Khimii" Vol XVIII (LXXI), No 8

Shows that during catalytic thermopolymerization
of divinyl in presence of fluoridin dimer forms
are produced, accompanied by migration of hydro-
gen atom. Main product of dimerization is

19/49T20

UssR/Chemistry - Polymerization, Aug 46
Dimerization (Contd)

1,4-dimethyl-cyclohexadiene. By-product is 1,2-
dimethyl-cyclohexadiene. Isobutyl's dimer
(vinyl-cyclohexene) is not formed under these
conditions. Submitted 25 Jan 46.

19/49T20

SLOBODIN, YA. M.

PA 19/49T21

USSR/Chemistry - Polymerization
Chemistry - Vinyl Compounds

Aug 48

"Polymerization and Depolymerization: V, Tetrameric Divinyl," Ya. M. Slobodin, F. Ya. Rachinskiy, I. N. Shokhor, Mil Med Acad imeni S. M. Kirov, 2 pp.

"Zhur Obshch Khimii" Vol XVIII (LXIX), No 8

Shows that tetramer formed during thermopolymerization of divinyl in presence of floridin in the temperature range 300-400° is 9,10-dimethyl-decahydroanthracene. Submitted 22 Jun 46.

19/49T21

PA 11/49T30

SHOBODIN, YA. M.

USSR/Chemistry - Nicotinic Acid, Aug 48

Chemistry - Isonicotinic Acid,
Solubility of

"Solubility of Nicotinic and Isonicotinic Acids,"
Ya. M. Shobodin, M. M. Goldman, Leningrad Affil-
lete, All-Union Sci Res Vitamin Inst, 2 3/4 pp

"Zhur Priklad Khimii" Vol XXI, No 8

Determines solubility of nicotinic acid in water,
alcohol and saturated saline solution. Determines
solubility in water of sodium nicotinate and the
hydrochloride of nicotinic acid. Shows that

11/49T30

USSR/Chemistry - Nicotinic Acid, Aug 48

Solubility of (Contd)

sodium nicotinate has composition $C_6H_4O_2N_2 \cdot \frac{1}{2} H_2O$.
Determines solubility of isonicotinic acid in
water. Submitted 5 Sep 47.

11/49T30

LI. Dec 50

SLCBOBIN YA. M.

11 Dec 50

USSR/ Chemistry - Fuels, Synthetic
Elastomers

"Spectra of Combination Dispersion and the Process of Isobutene Polymerization,"
Ye. F. Gross, Corr Mem, Acad Sci USSR, K. B. Nel'son, Ya. M. Slotodin, Leningrad State
U imeni A. A. Zhdanov, Mil Med Acad imeni S. M. Kirov

"Dok Ak Nauk SSSR" Vol LXXV, No 5, pp 697-700

Constitution of the dimer (I), trimer (II), tetramer (III), pentamer (IV), and polymer
having av mol wt of 800 (V) detd from their spectra. Found I to consist of the 2
possible isomers; II of isomers having double bond both in middle of chain and at end
while mol of III, IV, and V have double bonds at end of chains only.

PA 172T9

Ya. M. SLOBODIN

PA 194747

USSR/Chemistry - Organic Synthesis
Drugs

Nov 51

"Synthesis of Methylcyclopropylcarbinol," Ya. M.
Slobodin, I. N. Shokhor

"Zhur Obshch Khim" Vol XXI, No 11, pp 2001-2005

Worked out convenient lab method for reacting
acetyltrimethylene with Al isopropylate to prep
methylcyclopropylcarbinol, which had characteris-
tic properties. Yield was 87% of theoretical and
can be increased. Obtained spectra of combination
scattering of light for methylcyclopropylcarbinol
and acetyltrimethylene.

194747

CA

Structure of Gustavson's hydrocarbon. II. Stepwise synthesis of spiropentane. Ya. M. Shobolin and I. N. Shokhor. *Zhur. Obshchei Khimii* (J. Gen. Chem.) 21, 2005-11(1951); cf. Gustavson, *Izv. Akad. Nauk (Russ.)* 5, 237(1956); *J. prakt. Chem.* [2] 30, 105(1956); 30, 90 (1957); *C.A.* 43, 991d.—Raman analysis of Gustavson's hydrocarbon mixt. showed that the principal components are methylenecyclobutane and EtCMe:CH₂. The stepwise synthesis of spiropentane (Zelinskii and Kravets, *C.A.* 7, 1175) thesis of spiropentane only, since the 3-membered ring gives methylenecyclobutane ring, confirming the mechanism isomerizes to a 4-membered ring, confirming the mechanism of isomerization suggested by Pavorskii and Batalin (*C.A.* 9, 1780). $C(CH_2OH)_4$ (136 g.) and 102 g. Ac₂O refluxed 8 hrs. gave several fractions, including 50% 1,1,3,3-tetraacetyl diacetate, bp 302-5°, which crystallizes in part owing to transposition of Ac groups, depositing pentaerythritol; the higher fractions contained tetra- and triacetates. The product treated with red P and Br in CHCl₃ with ice cooling gave 34% 2,2-bis(bromomethyl)-1,3-propanediol diacetate, bp 182-7°, d_4^{20} 1.6518, n_D^{20} 1.60591, which (180 g.) treated with 180 ml. EtOH, 15 ml. H₂O, and 50 g. Zn dust 3

hrs. on the steam bath gave 1,1-cyclopropanedimethanol diacetate, 44%, bp 135-7°, d_4^{20} 1.6617, n_D^{20} 1.44458, which boiled 6 hrs. with satd. K₂CO₃ soln. gave 55% 1,1-cyclopropanedimethanol, bp 123-7°, d_4^{20} 1.0710, n_D^{20} 1.46433, $\gamma = 38.84$, partly crystg. on standing. A better procedure was to treat the bromide with Zn, sat. the mixt. with NH₃ at 0°, and let stand 2-3 days. The physical above with PBr₃ and pyridine gave 43% of the bis(bromomethyl)cyclopropane, bp 83-7°, d_4^{20} 1.7805, n_D^{20} 1.33643, $\gamma = 37.94$. This with Zn dust in EtOH with simultaneous distn. gave 47% hydrocarbon (II), bp 41.5-2.5°, d_4^{20} 0.7137, n_D^{20} 1.4162, $\gamma = 20.37$, which, hydrogenated over Pt oxide, readily took up 90% (of theoretical) H₂. Its const. and behavior confirm its structure as methylenecyclobutane and not a trace of spiropentane was found. Hydrogenation of the Gustavson hydrocarbon gives a time curve with a break indicating hydrogenation of 2 components, whereas II gave a smooth curve; monalysis gave cyclobutane and HCO₂H only. The isomerization to the cyclobutane ring seems to occur

mainly during the treatment of the dibromide, probably with formation of 1-bromo-1-(bromomethyl)cyclobutane from 1,1-bis(bromomethyl)cyclopropane. The Raman spectrum of the dibromide contains elements of 3- and 4-membered rings.

G. M. Kozlovskii

USSR, 1951

USSR/Chemistry - Fuels
Plastics

Apr 51

"Spectra of Combination Scattering of Light of Low-Molecular Polymers and the Polymerization of Isobutene," Ye. F. Gross, L. V. Mel'son, Ya. . . Slobodin, State U imeni A. A. Zhdanov, Leningrad

"Zhur Fiz Khim" Vol XIV, No 4, pp 504-512

Obtained spectra of combination scattering of light for dimer, trimer, tetramer, pentamer, and polymer of isobutene with av mol wt 800. Analyzed vibration frequency of =C=CH_2 group. Detd positions of C=C bonds in various forms of each polymer, concluded polymers tended toward mol structure with C=C bond at end of chain.

180T34

SLOBODIN, Ya. M.

USSR/Chemistry - Polymers

Jan 52

"Polymerization-Depolymerization. VII. Structure of the Tetramer of Isobutylene," Ya. M. Slobodin, Ye. M. Markova

"Zhur Obshch Khim" Vol XXII, No 1, pp 102-105

Investigation by Raman spectra of products of polymerization of isobutylene in presence of H_2SO_4 disclosed presence of following tetramers: (a) 2, 4, 4, 6, 6, 8, 8-heptamethylnonene-1, the chief product (presence of isomers with different Me group distribution is possible); (b) 2, 2, 6, 6-tetramethyl-4-neopentylheptene-3 (only approx 10% of tetramer

207120

USSR/Chemistry - Polymers (Contd)

Jan 52

content, contrary to scheme of F. Whitmore). No 2, 4, 4, 6, 6, 8, 8-heptamethylnonene-2 (present according to Whitmore) was detected.

207120

SLOBODIN, Ya. M.

USSR/Chemistry - Polymers

Jan 52

"Polymerization-Depolymerization. VIII. Action of Metallic Sodium on 1,4-Dibromobutene-2," Ya. M. Slobodin, N. M. Vinokurova

"Zhur Obshch Khim" Vol XXII, No 1, pp 105-109

Debromination of 1,4-dibromobutene-2 (I) with Na in dry ether proceeds by splitting off of Br to form 1,8-dibromooctadiene-2,6, which is further converted to octadiene-1,6, dodecatriene, and more highly polymerized products. Reaction mech is complex. High-polymer products must be increasingly unsatd. Upon splitting off of Br from I, cyclic hydrocarbons with 4 or 8 C atoms are not formed, in agreement with strain theory.

207T21

SLOBODIN, YA. M.

Slobodin, Ya. M., and Shokhor, I. N.- "Cyclopropylacetylene." (p. 195)

SO: Journal of General Chemistry, (Zhurnal Obshchei Khimii), 1952, Vol. 22, No. 2

USSR/Chemistry - Hydrocarbons

Feb 52

"Action of PCl_3 and PBr_3 on Methylcyclopropylcarbinol," Ya. M. Slobodin, I. N. Shokhor

"Zhur Obshch Khim" Vol XXII, No 2, pp 208-214

By means of Raman spectroscopy, identified products of interaction of PBr_3 with methylcyclopropylcarbinol (I) as α -bromoethylcyclopropane and about 70% 5-bromopentene-2. Established that α -chloroethylcyclopropane, product of interaction of PCl_3 with I, undergoes opening of ring only to small extent. During its prepn and treatment it is subjected to

209T15

USSR/Chemistry - Hydrocarbons (contd)

Feb 52

partial splitting off of HCl (10-15%) to form 75% vinylcyclopropane (II) and 25% trans-piperylene. Synthesized II and took its Raman spectrum.

209T15

SLOBODIN, Ya. M.

SLOBODIN, YA.M.

USSR/Chemistry - Butadiene

Apr 52

"The Configuration of Crystalline Butadiene Bromides," Ya. M. Slobodin, S. A. Zaboyev

"Zhur Obshch Khim" Vol XXII, No 4, pp 603,604

The combination dispersion spectra of butadiene bromides were investigated. The data obtained in this manner show that butadiene, in reacting with bromide, enters into the reaction in its "curved form," which leads to formation of cis-dibromide. The high-melting tetrabromide had a dl-configuration, while the low-melting tetrabromide has a meso-configuration.

224T35

Slobodin, Ya. M.

Chemical Abst.
Vol. 48 No. 6
Mar. 25, 1954
Electronic Phenomena and Spectra

4
6
The configuration of the crystalline bromides of butadiene.
Ya. M. Slobodin and S. A. Zolotarev. J. Gen. Chem.
U.S.S.R. 22, 863 (1952) (Engl. translation). See C.A. 46,
7433b. H. I. H.

238T26

USSR/Chemistry - Hydrocarbon Isomer-
ization Nov 52

"Isomerization of Allene Hydrocarbons With
Silicates: IX. Isomerization of Hexadiene-1, 2,"
Ya. M. Slobodin.

"Zhur Obshch Khim" Vol 22, No 11, pp 1958-1964

It was shown that hexadiene-1, 2, in contact
with floridin, is isomerized to a mixt contain-
ing unchanged allene, conjugated diene, mono-
substituted acetylene and disubstituted acety-
lene. The conjugated diene and monosubstituted

238T26

acetylene are the primary products of the iso-
merization of allene, while the disubstituted
acetylene is the secondary product and is iso-
merized directly from the monosubstituted acety-
lene. On the basis of spectroscopic data, it may
be assumed that the disubstituted acetylene con-
tains a methyl group, as one of the substitutes,
i.e. that it is hexyne-2. Hexadiene-2, 4 is the
conjugated diene which is formed during the iso-
merization of hexadiene-1, 2 over floridin.

238T26

SHARON Y. H.

SLOBODIN, Ya. M.

Chemical Abst.
Vol. 48 No. 9
May 10, 1954
Organic Chemistry

2
① chem
Isomerization of alkane hydrocarbons by silicates. IX.
Isomerization of 1,2-hexadiene. Ya. M. Slobodin. J.
Gen. Chem. U.S.S.R. 22, 2007-12 (1953) (Eng. translation).
See C.A. 47, 8830g. H. L. H.

Slobodin, Ya. M.

CZECH

Isomerization of allenic hydrocarbons by the silicates.
~~4c. Trimethylallene. Ya. M. Slobodin. Sbornik Statei~~
~~Obshch. Khim. 2, 811-5 (1933); Cf. C.A. 33, 6259; 48,~~
~~5003b. —Me₃PtCl₃ (110 g.) treated at 60° with 108 g. Br~~
~~and allowed to stand overnight yielded 175 g. Me₃CBrCH-~~
~~BrEt, b_p 81-8°, Raman spectrum (cm.⁻¹) 181(8), 295(5),~~
~~311(2), 483(4), 615(10), 633(3), 811(6), 1036(4), 1103(5),~~
~~1201(2), 1225(2), 1339(2), 1453(2), 2377(3), 2930(4), 2984~~
~~(3). This was slowly added to refluxing alc. KOH soln.~~
~~and the mixt. refluxed 2 hrs. longer, yielding 98 g. mixed~~
~~MeC(:CH₂)CHBrEt and Me₃C:CHBrEt, b_p 61-2°, which,~~
~~heated in 50-g. portions with 1:3 alc. KOH in an autoclave~~
~~4 hrs. at 150°, yielded a hydrocarbon, b. 70-4°, d₄ 0.7175,~~
~~n_D 1.4320, shown by its Raman spectrum to be an admixt.~~
~~with MeCH:CHCMe:CH₂, from which it was freed by heat-~~
~~ing with maleic anhydride, finally with Na, followed by distn.~~
~~over Na, which gave, from 21 g. crude product, only 5 g.~~
~~fairly pure Me₃C:C:CHMe (I), b. 70-70.5°, Raman spec-~~
~~trum (cm.⁻¹) 264(6), 333(8), 392(3), 543(5), 713(4), 1027(6),~~
~~1211(10), 1374(1), 1403(2), 1441(2), 1470(4), and 1573(1).~~
~~This passed over fluoridin at 200° gave some 50% polymeric~~
~~material, along with some 50% monomeric material con-~~
~~sisting of 50% product with 2 double bonds and 44% olefin,~~
~~as shown by the uptake of H₂; the phys. properties of the~~
~~catalyzate indicate the presence of 51% unchanged I, 2%~~
~~conjugated diene, and some 44% Me₃C:CHEt. No acety-~~
~~lenic products were detected. Fairly pure I, b. 70-70.5°, n_D~~
~~1.43191, d₄ 0.7305. G. M. Kasolynoff~~

Slobodin, Ya. M.

3

CZECH

IV. Inter-
mediate products of stepwise synthesis of spiropentane.
[Ya. M. Slobodin and I. V. Shuklov, *Sbornik State Imp. Akad. Nauk* 8, 237 (1956); *C.A.* 46, 1204 (1956).] In the stepwise synthesis of spiropentane, during the closure of the 3-membered ring there takes place a partial transformation into a 4-membered ring, which change is completed when the final product is prepd. Olefin formation occurs to a lesser degree. The cleavage of Br in the final step in the presence of Na_2CO_3 and NaI yields a hydrocarbon mixt. contg. about 10% spiropentane. The 1,1-dimethylcyclobutane (prepd. from the diacetate contains a mixt. of products with 3- and 4-membered rings. Oxidation of this with $\text{K}_2\text{Cr}_2\text{O}_7$ in aq. H_2SO_4 gave cyclopropanedicarboxylic acid and $(\text{CH}_3\text{CO})_2\text{CH}_2$. Methylcyclobutane (23 g.) in Et_2O treated with 55 g. of H_2 with ice cooling yielded 65 g. 1-hydroxymethylcyclobutane, bp. 75-80°, d_4^{20} 1.7044, n_D^{20} 1.35521, Raman spectrum (cm⁻¹) 1394(2), 292(8), 432(3), 614(3), 722(2), 815(4), 854(2), 892(2), 896(6), 922(4), 952(1), 1012(2), 1224(2), 1328(4), 1340(1), 1423(4), and 1445(1). This with Zn and HCl yielded 80% pure methylenecyclobutane, bp. 41.6-42.2°, d_4^{20} 1.4186, Raman spectrum (cm⁻¹) 352(5), 374(1), 668(5), 717(1), 877(1), 909(3), 952(10), 1101(2), 1308(3), 1427(2), 1670(8), 2367(1), 2908(8), 2949(8), and 3068(2). Reducing the dihydride with AgOAc and AcOH 6 hrs. gave pure 1-(hydroxymethyl)cyclobutanol

OVER

YA. M. SLOBODIN
 diacetate, b. 106-107°. Raman spectrum 108(6), 219(4),
 371(2), 427(2), 470(8), 633(4), 704(4), 793(4), 845(2),
 874(2), 918(8), 971(5), 1032(4), 1069(4), 1108(4), 1174(2),
 1448(3), 1691(3), and 1743(6). The hydrocarbon obtained
 from Zn dust and 1,1-bis(bromomethyl)cyclopropane (loc.
 cit.) had the Raman spectrum: 353(4), 371(2), 857(5),
 77(10.5), 573(2), 908(3), 955(10), 1191(2), 1391(2), 1424(2),
 1651(0.5), 1670(8), 2828(1), 2850(1), 2906(5), 2924(4),
 2953(4), and 3068(8). If this di-Br deriv. (11 g.) is added to
 50 ml. EtOH, 17.5 ml. H₂O, 16 g. Zn dust, 2.8 g. Na₂CO₃,
 and 0.75 g. NaI, the resulting hydrocarbon, b. 39-42°, has
 the Raman spectrum: 304(6), 352(4), 374(2), 583(2),
 613(1), 658(5), 777(1), 874(4), 906(5), 952(10), 1033(2),
 1155(1), 1191(3), 1303(5), 1327(1), 1654(0.5), 1678(7),
 2325(2), 2361(3), 2909(3), 2928(3), 2950(5), and 3069(5).
 G. M. Kozlov

2/2

SLOBOGIN, Ya. M. and SHOKHOR, I. N.

Cyclopropane (1,5-Spiro)-2,4,6,-Triketohexahydro Pyrimidine, page 850,
Sbornik statey po obshchey khimii (Collection of Papers on General
Chemistry), Vol II, Moscow-Leningrad, 1953, pages 1680-1686.

SLOBODIN, Ya. M.

~~The structure of Gustavson's hydrocarbon. III. Action
of zinc dust on tetrahaloneopentanes. Ya. M. Slobodin
and I. N. Shokhor. J. Gen. Chem. U.S.S.R. 23, 37-41
(1953) (Engl. translation).—See C.A. 48, 543c.~~
H. L. H.

SLOBODIN, Ya M.

Chem Abs V48

1-25-50

Organic Chemistry

The structure of Gustavson's hydrocarbon. III. Action of zinc dust on tetrahaloneopentanes. Ya. M. Slobodin and I. N. Shokhor. *Zhur. Obshchei Khim.* 23, 42-6 (1953), cf. C.A. 46, 6598e, 10112c. — Zn dust in nonaq. AcNH_3 reacts with tetrahaloneopentanes yielding a mixt. of hydrocarbons consisting of methylenecyclobutane (I), spiropentane (II) and 2-methyl-1-butene (III). The content of II rises as one substitutes tetraiodoneopentane for the tetra-Cl analog; the tetra-Br analog gives intermediate yield. Yield of II from tetraiodo deriv. is not affected by addn. of Na_2CO_3 which confirms its role as the agent which regenerates the iodide ions. Possibly the variation of yield of II is related to variation of atomic radius of the halogens involved. PCl_5 (140 g.) was treated with SO_2 and the mixt. of SOCl_2 - POCl_3 was treated with 14 g. pentaerythritol (IV), followed slowly by 8 g. pyridine with ice cooling; after 3 hrs. refluxing the mixt. was quenched in ice yielding 21 g. $\text{C}(\text{CH}_2\text{Cl})_4$ (V), m. 97° . PBr_3 and IV gave $\text{C}(\text{CH}_2\text{Br})_4$ (VI), while treatment of this with NaI in MeEtCO gave $\text{C}(\text{CH}_2\text{I})_4$ (VII). V failed to react with Zn dust in aq. EtOH in the presence of NaI and Na_2CO_3 . Heating 21 g. V, with 25 g. Zn dust, 10.6 g. Na_2CO_3 , 2.5 g. NaI, and $(\text{CH}_3\text{OH})_2$ to $180-90^\circ$ gave some 3 g. low-boiling material, b. about 80° , identified as an unsatd. chloride of unknown structure. Heating 21 g. V, 90 g. dry AcNH_3 , 15 g. Na_2CO_3 , and 50 g. Zn dust to $170-80^\circ$ led to rapid formation of a hydrocarbon in 40% yield; after distn. over Na this b. $33-42^\circ$ (mostly $38-42^\circ$). The Raman spectrum showed the presence of I, II, and III in 80-5%, 10%, and 5-10% ratio, resp. When NaI (5 g.) was added the yield of total hydrocarbon rose to 45%, and the content of II rose to 30-40%, that of III to 10-20%, and I dropped to 50%. Similar reaction of VI in aq. EtOH gave 80% hydrocarbons: 80-90% I and 10-15% III; if Na_2CO_3 and NaI are added the hydrocarbon yield rises to 78-89% with 24-8% II, 54-8% I, 13-18% III, and 1-3% 1,1-dimethylcyclopropane; run in AcNH_3 with Na_2CO_3 added the hydrocarbon yield is 40%; 20-30% II, 50-60% I, and 10-20% III; in presence of both NaI and Na_2CO_3 the total yield is 38%; 47-60% II, 10-36% I, and 17-30% III. VII reacts with Zn dust very slowly in aq. EtOH. In AcNH_3 with Na_2CO_3 and NaI the total yield of hydrocarbons rises to 80%, contg. 50% II, 40% I, and 10% III; without these addenda the total yield is still 80%; 50% II, 25% I, and 25% III.

SLOBODIN, YA. M.

Chemical Abst.
Vol. 48 No. 3
Feb. 10, 1954
Organic Chemistry

Pyrylene. Ya. M. Slobodin and N. M. Khokhachev. *Zhur. Obshch. Khim.*, 1953, 29, 1453; G. Braun and Teufert, *C.A.* 22, 2243. --Pyrylene (1-penten-3-yne), b. 57-8°, d_4^{20} 0.7412, n_D^{20} 1.45737, does not react with reagents typical of monosubstituted acetylene. On hydrogenation it adds 8 H atoms over Pt black. Raman spectrum shows the following lines (cm^{-1}): 238(3), 259(3), 319(3), 361(2), 397(2), 423(2), 468(5), 518(5), 548(5), 558(2), 678(1), 703(2), 732(2), 791(1), 899(1), 913(1), 1029(1), 1082(8), 1108(1), 1163(10), 1276(2), 1385(6), 1390(5), 1412(5), 1558(1), 1586(1), 1609(10), 1618(5), 1836(4), 2098(1), 2137(1), 2159(4), 2237(10), 2339(1), 2360(1), 2921(8), 2984(4), 3012(3), 3099(2). The 1600 and 2200 region lines indicate the double and the triple bond, resp., with conjugation since 1609 and 1618 are weak. The 2237 cm^{-1} frequency indicates disubstituted acetylene. Dimethylpiperidine (cf. B. and T., *loc. cit.*), b. 73-5°, has the Raman spectrum (cm^{-1}): 290(2), 355(1), 341(1), 809(1), 962(1), 1020(1), 1049(1), 1124(3), 1191(1), 1229(3), 1266(1), 1308(3), 1374(5), 1411(2), 1439(2), 1458(4), 1631(3), 1596(4), 1650(20), 2232(2), 2313(1), 2491(3), 2880(2), 2921(1), 2989(1). The amine undergoes rapid tar formation when illuminated; pure specimens have d_4^{20} 0.8024, n_D^{20} 1.4618, which agree in M/R_0 with $\text{C}_8\text{H}_{11}\text{N}$ with 2 double bonds. The Raman spectrum suggests that it is not an individual but a mixt. containing an acetylenic amine; the principal constituent appears to be $\text{Me}_2\text{NCMe:CHCH:CH}_2$, while the impurity may be $\text{MeC}\equiv\text{CCH}_2\text{CH}_2\text{NMe}_2$. Exhaustive methylation yields the same hydrocarbon with conjugated olefin-acetylene bonds. Exhaustive methylation of $\text{CH}_2\text{:CH(CH}_2)_3\text{NMe}_2\text{OH}$ gave piperylene, MeCH:CHCH:CH_2 , whose Raman spectrum contains the following lines (cm^{-1}): 385(5), 478(2), 618(1), 899(2), 952(2), 1034(1), 1108(0.5), 1167(3), 1191(1), 1249(10), 1295(8), 1388(2), 1435(4), 1488(4), 1606(4), 1645(10). Thus it is a cis isomer. The product from the tetrabromide is the trans form. *Cf. C.A.* 46, 10112. G. M. Kosolapoff

Slobodin, Ya. M.

Pyrene. Ya. M. Slobodin and N. M. Khokhacheva.
J. Gen. Chem. USSR, 25, 187-8 (1953) (Engl. translation).—See C.A. 48, 1233g. H. L. H.

Slobodin, Ya. M.

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Chem

Decomposition of trimethylammonium hydroxide.
Ya. M. Slobodin and I. N. Shcheklov. J. Gen. Chem.
U.S.S.R. 25, 761-8 (1953) (Engl. translation).—See C.A.
48, 4432d. H. L. H.

SLOBODIN, Ya. M.

Chemical Abst.
Vol. 48 No. 8
Apr. 25, 1954
Organic Chemistry

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(2) chem, fuels

Synthesis of methyl cyclopropyl ketone by exhaustive methylation. Ya. M. Slobodin and N. A. Selezneva. *Zhur. Obshchei Khim.* 23: 886-7 (1953); cf. C.A. 46: 7059n. Treatment in the cold of $\text{Ac}(\text{CH}_2)_3\text{Br}$ with a slight excess of Me_3N gave $\text{AcCH}_2\text{CH}_2\text{CH}_2\text{NMe}_3\text{Br}$, which, slowly distd. with slight excess 40% KOH, yielded 40-5% *Me* cyclopropyl ketone, b. 111-115°, d_4^{20} 0.8947, n_D^{20} 1.4220; 2,4-dinitrophenylhydrazone, m. 136-8°. Use of Ag_2O gave vanishingly low yields. The product was further identified by its Raman spectrum. G. M. Kosolapoff

SLOBODIN, YA. M.

USSR/Chemistry - Hydrocarbons

Sep 53

"Concerning 1, 1-Dimethylcyclopropane," Ya. M. Slobodin, V.I. Grigor'yeva, and Ya.E. Shtulyakovskiy, Leningrad Sci-Res Inst for the Conversion of Petroleum and the Production of Synthetic Liquid Fuel

Zhur Obshch Khim, Vol 23, No 9, pp 1480-1485

The action of Br on 1, 1-dimethylcyclopropane (I) produces a mixture of bromides containing 40% of trimethyl-ethylene bromide and 60% of asymmetrical methyl-ethyl-ethylene bromide. The splitting off

268r28

of Br from the mixture of bromides obtained leads to the formation of trimethylethylene (II) and asymmetrical methyl-ethyl-ethylene in the same proportion. The hydrogenation of I at 150° over Ni deposited on diatomaceous earth, leads to the formation of isopentane. When there is a deficiency of H during the hydrogenation of I, the resulting hydrocarbon mixt, in addition to unchanged I, contains II.

268r28

Synthesis of 1,1-dialkylcyclopropanes from aldehydes.
Ya. M. Slobodin, V. I. Grigor'eva, and Ya. E. Shtanlyan-
Fovskii (Sci. Research Inst. Petroleum Processing and
Artificial Liquid Fuel, Leningrad). Zhur. Obshchei Khim.

23, 1065-7(1951).—The following method is a generally useful synthesis of 1,1-dialkylcyclopropanes. To 17 g. KOH in 75 ml. EtOH was slowly added at 40° a mixt. of 22 g. MeEtCHCHO, 65 ml. 25% formalin, and 30 ml. EtOH, the mixture was then heated 18 hrs. to 80°, concd., extd. with Et₂O 5-6 hrs., and the ext. distd., yielding 55% MeEtC(CH₂OH)₂, b_m 111-14°, m. 43°. This with an equimolar amt. of PBr₃ heated to 100°, and finally 18 hrs. at 150° gave 25% 1,3-dibromo-2-methyl-2-ethylpropane, b_m 78°, b_p 92°, d₄ 1.6075, n_D²⁰ 1.5073; Raman spectrum 186(2), 242(3), 312(1), 336(0.5), 371(1), 430(2), 414(2), 501(2), 595(0.5), 639(7), 653(10), 695(2), 739(6), 778(2), 826(3), 858(4), 888(1), 924(2), 990(1), 1055(1), 1173(0.5), 1192(0.5), 1263(2), 1306(0.5), 1341(0.5), and 1443(0.5) cm.⁻¹ This (14.5 g.) added gradually to boiling mixt. of 31 g. Zn dust, 45 ml. EtOH, and 5 ml. H₂O yielded on continuous distn. of the reaction products from the mixt., 63% 1-methyl-1-ethylcyclopropane, b. 56.5-7.0°, d₄ 0.7013, n_D²⁰ 1.3885; Raman spectrum: 100(0.5), 265(0.5), 302(1), 415(1), 431(1), 446(1), 473(4), 674(10), 736(1), 783(1), 871(1), 881(6), 934(7), 1009(5), 1067(4), 1115(2), 1230(5),

1285(3), 1383(1), 1435(3), 1456(3), 2933(6), 2960(8), 2994(20), and 3055(5). Similarly, 46.4 g. Me₂CHCHMeCHO, 90 ml. EtOH, 130 ml. 28% formalin, and 35 g. KOH in 150 ml. EtOH gave 46% HOCH₂CMe(CHMe)₂CH₂OH, b_m 139-40°, m. 56-7°, which with PBr₃ gave 33% BrCH₂CMe(CHMe)₂CH₂Br, b_m 123-5°, d₄ 1.5408, n_D²⁰ 1.6073, which with Zn dust as above gave 77% 1-methyl-1-isopropylcyclopropane, b. 82°, d₄ 0.7216, n_D²⁰ 1.4000; Raman spectrum was: 271(2), 309(2), 348(2), 372(1), 392(1), 429(3), 501(2), 649(1), 663(10), 715(1), 778(1), 811(8), 849(5), 933(9), 1004(6), 1040(2), 1084(2), 1124(4), 1158(1), 1190(2), 1228(1), 1258(7), 1313(3), 1358(2), 1390(2), 1425(3), 1448(6), 1461(6), 2974(10), 2992(2), 2993(4), 2996(8), 2993(8), and 3063(3). G. M. K.

Slobodin, V. I. USSR.

Action of phosphorus trichloride and tribromide on dimethylcyclopropylcarbinol. Ya. M. Slobodin, V. I. Grigor'eva, and Ya. B. Shumilovskaya. *Petroleum Processing Inst., Leningrad*. *Zhur. Obshchei Khim.* 23, 1873-7 (1953); (cf. C.A. 46, 10111k, 10112c). Dimethylcyclopropylcarbinol (I) and PCl_3 yield up to 50% abnormal product: 5-chloro-2-methyl-2-pentene (II), along with isopropenylcyclopropane (III). PBr_3 and I yield only the abnormal product: 5-bromo-2-methyl-2-pentene (IV). I was prepd. from MeMgI and acetylcyclopropane; pure I b. $122-3^\circ$, d_4^{20} 0.8316, n_D^{20} 1.4333. To 20 g. PCl_3 in 150 ml. dry Et_2O was added a little pyridine, followed by a mixt. of 40 g. I and 16 g. pyridine at $30-5^\circ$; after 0.5 hr. at room temp. the mixt. was quenched in ice- H_2O and the org. layer was distd. yielding 8 g. crude hydrocarbon, b. $54-78^\circ$, and 20.5 g. crude chloride, b. $129-33^\circ$. Redistn. gave III, b. $70-2^\circ$, d_4^{20} 0.7514, n_D^{20} 1.4260. Distn. of the chloride yielded pure II, b. $132-4^\circ$, d_4^{20} 0.9164, n_D^{20} 1.4463. Ozonolysis of II gave Me_2CO peroxide, m. 128° , and $\text{ClCH}_2\text{CH}_2\text{CO}_2\text{H}$, m. 38° . Hydrolysis of II with 10% K_2CO_3 gave I, but in impure condition; as some unchanged II was still present and the product showed a Raman line at 1674 cm^{-1} , indicating that along with I, the hydrolysis gave some 2-methyl-2-penten-5-ol. II added to hot soln. of KOH in $\text{EtOCH}_2\text{CH}_2\text{OH}$ gave 70% 2-methyl-2,4-pentadiene (V), b. $75.5-7.0^\circ$, n_D^{20} 1.4518; the product readily gave an adduct with maleic anhydride (cf. Farmer and Warren, C.A. 26, 1573). III obtained in the original reaction contained some 3% diene, as shown by quant. detn. of maleic anhydride addn. Reaction of 20 g. I with 60 g. PBr_3 under the above conditions gave 86% IV, b. $154-5^\circ$, d_4^{20} 1.2506, n_D^{20} 1.4780; with KOH in $\text{EtOCH}_2\text{CH}_2\text{OH}$ it gave V. Raman spectra given. G. M. K.

USSR.

G. M. Kosolapoff, Ya. M. Skoboda and M. V. Blizova.
 Zhur. Obshchei Khim. 23: 1634-7 (1953). — Passage of 50 g.
 cyclobutanecarboxylic acid and 83 g. 84% HCO_2H through
 a tube filled with MnO at $410-20^\circ$ gave 15.5 g. cyclobutyl
 formaldehyde, b. $118-15^\circ$, d., 0.9356, n_D 1.4357; 2,4-
 dinitrophenylhydrazones, m. $163-4^\circ$. The Raman spectrum
 was given. The aldehyde polymerizes readily in the
 presence of CaCl_2 , yielding a dimer, m. $115.5-20.5^\circ$. The
 aldehyde (15.5 g.) was added to a soln. of 54 g. 34% formalin
 in 123 ml. H_2O from 2 separate funnels simultaneously with
 8.3 g. $\text{Ca}(\text{OH})_2$ suspended in 47 ml. H_2O at 30° over 3 hrs.
 with good stirring; after 1 hr. at 60° the soln. was filtered,
 neutralized with H_2SO_4 and exld. for 7-10 days with $(\text{CH}_3)_2\text{Cl}_2$,
 yielding 79% 1,1-dimethylcyclobutane, b., $134-8^\circ$.
 Only a trace of the dial (I) was obtained on reduction of di-
 st. 1,1-cyclobutanedicarboxylate with LiAlH_4 , since the
 ester failed to react in Et_2O ; however, the reduction of the
 free acid (15 g.) with fresh LiAlH_4 gave an unstated yield
 of the I, which, however, in contrast to the above prepn.
 m. $132-9^\circ$. I treated with 20% by wt. of pyridine and
 then added to PBr_3 with ice-cooling gave after dual heating
 to $80-80^\circ$, 40% 1,1-dibromodimethylcyclobutane, b., $102-4^\circ$,
 d., 1.5786, n_D 1.5240. This treated with Zn dust in 85%
 EtOH with continuous distn. of the product gave 78%
 hydrocarbon, C_4H_8 , b. $72-8^\circ$, d., 0.7850, n_D 1.4321,
 whose Raman spectrum was given: I absorbs 1 mole H
 (slight excess); ozonolysis gave HCO_2H and cyclopentanone.
 Thus the hydrocarbon was methylcyclobutane, and no
 cyclohexane was detected. G. M. Kosolapoff

Slobodin, Ya. M.

USSR

Dibromides of butadiene and its homologs. Ya. M. Slobodin. J. Gen. Chem. U.S.S.R. 24, 453-4 (1954) (Engl. transl.) See C.I. 49, 6050f. H. L. R. H.

AD Jan

SLOBODIN, YA. M.

U S S R .

Spiro[2,4]heptane. Ya. M. Slobodin and M. V. Bilgova.
J. Gen. Chem. U.S.S.R. 40:1037-1038 (1965) (Engl. translation).
—See C.A. 49, 5317i. H. L. H.

MS 24

Slobodin, Ya. M.

USSR/Chemistry - Analysis

Card 1/1 : Pub. 151 - 8/37

Authors : Slobodin, Ya. M.

Title : Butadiene dibromide and its homologues

Periodical : Zhur. ob. khim. 24/3, 444-447, Mar 1954

Abstract : The combined diffusion spectra of divinyl dibromide and its closest homologues, diethyl and diacetyl ether of butene-2-diol-1,4, were investigated. It was established that addition of Br to above mentioned conjugated dienes follows a generally known pattern. The 1,4-dibromides formed as result of the addition reaction were found to have a trans-configuration. The bond frequencies of the dibromides were calculated. The combined diffusion spectra of the products investigated are listed. Six references: 2-USA and 4-USSR (1931-1953). Tables.

Institution :

Submitted : October 23, 1953

SLOBODIN, Ya.M.

USSR/Chemistry

Card 1/1

Authors : Slobodin, Ya. M.; and Blinova, M. V.

Title : About spiro-(2, 4)-heptane

Periodical : Zhur. Obshchei Khim. 24, Ed. 4, 621 - 625, April 1954

Abstract : Through condensation of cyclopentylformaldehyde with formaldehyde in an alkali medium the authors obtained an 86% yield of 1, 1-dimethylol-cyclopentane. Separation of bromine from 1, 1-dibromodimethylcyclopentane with zinc powder led to formation of a hydrocarbon mixture containing about 40% of spiro-(2, 4)-heptane and about 60% of methylene-cyclohexane. The combined diffusion spectrum of the derived hydrocarbon showed a line with a frequency of 1650 cm^{-1} which indicates the presence of a hydrocarbon with double bond. Ten references; 7 USSR since 1915; 1 USA 1948; 2 Germans since 1909. Table, chem. formulas.

Institution :

Submitted : May 20, 1953

SLOBODIN, Ya. M.

USSR/Chemistry - Synthesis

Card 1/1 : Pub. 151 - 31/42

Authors : Slobodin, Ya. M.; Blinova, M. V.; and Devyatova, N. I.

Title : Synthesis of cyclopentanol

Periodical : Zhur. ob. khim. 24/9, 1639-1640, Sep 1954

Abstract : Various methods of reducing cyclopentanol were investigated. It was established that hydrogenation of cyclopentanol, over a Ni-catalyst applied on diatomaceous earth (kieselguhr) at 125°, results in formation of cyclopentane. The results obtained, during hydrogenation over a copper-chromium-barium catalyst at 160-170°, are described. Eight references: 3-German; 2-USSR; 2-French and 1-USA (1893-1944).

Institution : ...

Submitted : April 14, 1954

Slobodin, Ya. M.
USSR/Optics - Spectroscopy, K-6

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 35832

Author: Slobodin, Ya. M., Shmulyakovskiy, Ya. E., Rzhendzinskaya, K. A.

Institution: None

Title: Combination-Scattering Spectra in Low-Molecularo Polysiloxanes

Original

Periodical: Dokl. AN SSSR, 1955, 105, No 5, 958-960

Abstract: Studies were made of the combination spectra of hexamethyldi-siloxane $(\text{CH}_3)_3\text{Si}-\text{O}-\text{Si}(\text{CH}_3)_3$, octamethyltrisiloxane $((\text{CH}_3)_3\text{Si}-\text{O}-\text{Si}(\text{CH}_3)_2-\text{O}-\text{Si}(\text{CH}_3)_3)$, dekamethyltetrasiloxane $(\text{CH}_3)_3\text{Si}-\text{O}-\text{Si}(\text{CH}_3)_2-\text{Si}(\text{CH}_3)_2-\text{O}-\text{Si}(\text{CH}_3)_3$, hexamethylcyclotrisiloxane $(\text{--Si}(\text{CH}_3)_2-\text{O--})_3$, octamethylcyclotetrasiloxane $(\text{--Si}(\text{CH}_3)_2-\text{O--})_4$, dekamethylcyclopentasiloxane $(\text{--Si}(\text{CH}_3)_2-\text{O--})_5$, and dodekamethylcyclohexasiloxane $(\text{--Si}(\text{CH}_3)_2-\text{O--})_6$. A tentative interpretation of the bands is given. A substantial difference was observed between the spectrum of the hexamethylcyclotrisiloxane and the spectra of the other investigated cyclical polysiloxanes.

Card 1/1

Slobodin, Ya. M.

✓ Action of trimethylamine on polyhalides. Ya. M. Slobodin and N. A. Selezneva. *Zhur. Khim. Khim. 20, 63 (1966)*. CH_2I_2 and excess Me_3N (cooling needed) in a sealed tube in 1 month gave 95% $\text{CH}_2(\text{NMe}_2)_2$ and $\text{CH}_2\text{I}(\text{NMe}_2)$ in 49:51 proportion. CH_2Br_2 and Me_3N in 1 month gave 50% $\text{CH}(\text{NMe}_2)_2\text{Br}$; $\text{CH}_2\text{BrCH}_2\text{Br}$ and Me_3N in 2 months gave 96% $(\text{CH}_2\text{NMe}_2)_2\text{Br}$; cyclohexene dibromide and Me_3N in 3 months gave 100% 1,2-bis(trimethylammonium)cyclohexane bromide; $\text{MeCHBrCH}_2\text{Br}$ and Me_3N in 4 months gave 50% 1,2-bis(trimethylammonium)propane bromide; $\text{Me}_2\text{CBrCH}_2\text{Br}$ and Me_3N in 4 months gave 30% 1,2-bis(trimethylammonium)-2-methylpropane bromide; $\text{CH}_2(\text{CH}_2\text{Br})_2$ and Me_3N in a few days gave 100% $\text{CH}_2(\text{CH}_2\text{NMe}_2)_2\text{Br}$. In 2 months $\text{CHBr}(\text{CH}_2\text{Br})_2$ and Me_3N gave the diammonium salt $\text{C}_4\text{H}_{12}\text{N}_2\text{Br}_2$ and after 5 months there formed 100% 1,2,3-tris(trimethylammonium)propane bromide. $\text{MeCBr}(\text{CH}_2\text{Br})_2$ and Me_3N in 6 months gave 100% 1,2,3-tris(trimethylammonium)-2-methylpropane bromide while in 3 months there was formed only the diammonium salt $\text{C}_5\text{H}_{14}\text{N}_2\text{Br}_2$. Butadiene tetrabromide (solid isomer) and Me_3N in 3 months gave 100% 1,2,3,4-tetrakis(trimethylammonium)butane bromide. $\text{CHOH}(\text{CH}_2\text{Br})_2$ and Me_3N in 2 months gave 100% 1,3-bis(trimethylammonium)-2-propanol bromide. In 3 months $\text{CHOH}(\text{CH}_2\text{Cl})_2$ and Me_3N gave a mixture of 80% monoammonium salt and 20% diammonium salt. $\text{CO}(\text{CH}_2\text{Br})_2$ and Me_3N in several days gave 1,3-bis(trimethylammonium)-2-propanone bromide. In 2 months $\text{ClCH}_2\text{CH}_2\text{CH}_2\text{CN}$ and Me_3N gave CH_2I and Me_3N (added at -25°) after several days gave $\text{CH}_2\text{CH}_2\text{NMe}_2\text{I}$. Crotyl chloride and Me_3N in 40 hrs. gave $\text{MeCH}(\text{CH}_2\text{NMe}_2)\text{Cl}$. Addn. of Me_3N to $(\text{CH}_2\text{CH}_2\text{Br})_2$ with cooling in Et_2O rapidly gave $(\text{CH}_2\text{CH}_2\text{NMe}_2)_2$.

Chem

1/2

400

Slobodin, Y. M., Selezneva, N. A.

MeBr). Similarly, in several days MeN and 2,5-dibromo-
hexene gave 100%. 2,5-bis(trimethylammonium)-3-hexene-
bromide. When triethylallylammonium, 1,2-bis(tri-
methylammonium)propane, or 1,3-bis(trimethylammonium)-
propane halides were treated with 10% excess 40% KOH and
warmed, there was obtained, resp., 60%, 90%, or 85%
allylene, mixed with a little unsatd. amine. Similar treat-
ment of I gave crotonic acid. The allylene prep'd. above
boiled over a wide range but appeared to be totally free of
allene.

G. M. Kosolapoff

2/2
PM

Slobodin, Ya. M.

¹ Synthesis of acetylenes by exhaustive methylation. Ya.
M. Slobodin and N. A. Selezneva. *J. Gen. Chem. U.S.S.R.*
20, 783-5 (1956) (English translation).—See *C.A.* 50, 14502a
B. M. R. ² *Chem*

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Slobodin, Y. A. M.

✓ Action of trimethylamine on polyhalides¹ Ya. M.
Slobodin and M. A. Selezneva. J. Gen. Chem. U.S.S.R. 26,
797-801 (1956) (English translation).—See C.A. 50, 14510f.
B. M. R. Chem. 2

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SLOBODIN, YA. M.

✓ Simple acetylenes and alkane compounds. Ya. M.
Slobodin and N. A. Selezneva. U.S.S.R. 107,169, Aug. 25,
1987. Salts of 1,2- and 1,3-bis(quaternary ammonium)
bases are distd. with a solid hydroxide or its aq. soln. To
obtain alkene compds. 1,4-bis(quaternary ammonium)
bases contg. an unsatd. C chain are treated in a similar
manner. M. Hosh

3
1-4E3d
1-4E4d
1-4E2c(7)
2-MAY

Slobodin, Ya. M.

✓ Thermal decomposition of butane-2,3-bis(trimethylammonium hydroxide). Ya. M. Slobodin and O. Sergeev. Zhur. Obshch. Khim. 27, 1832-3 (1957); C.A. 30, 14510f; Hurd and Drake, C.A. 33, 7739f. Distn. of 12 g. (MeCHNMe₃)₂Br₂ with excess 40% KOH and collection of the volatile products in Br gave butadiene tetrabromide, m. 116°. No adducts corresponding to dimethylacetylene or methylallene were found. C₄H₆:CHCH₂NH₂ with Ag₂O gave EtCO₂H, possibly through formation of EtCH:NH. G. M. Kosolapoff

3

4E4j
4E2C (1)
24m
4E3d

My

SLOBODIN, Ya.M.

Synthesis of enynes by methylation. Zhur. ob. khim. 27
no.9:2473-2475 S '57. (MIRA 11:3)
(Hydrocarbons) (Methylation)

SLOBODIN, Ya.M.; AL'TMAN, S.S.; TAMMIK, K.D.

Preparation of antiwear sulfur-containing additives based on ethylene sulfide and fatty acids. Proizv.smez.mat. no.5:58-63 '59. (MIRA 13:4)

1. Leningradskiy opytный neftemaslozavod imeni Shauvyana.
(Lubrication and lubricants--Additives)

SLOBODIN, Ya.M., doktor khim.nauk, prof.

Synthesis of hydrocarbons with a triple bond by the method
of exhaustive methylation. Trudy LIXI no.25:162-168 '59.
(MIRA 12:11)

(Hydrocarbons)

S/079/61/031/012/003/011
D228/D301

AUTHORS: Slobodin, Ya. M., and Khitrov, A. P.

TITLE: The problem of preparing allene

PERIODICAL: Zhurnal obshchey khimii, v. 31, no. 12, 1961, 3945-3947

TEXT: In considering this question the authors note the relatively small amount of previous work devoted to the properties of allenes. This has chiefly been due to the absence of suitable techniques for preparing these hydrocarbons in a sufficiently pure form; according to S. V. Lebendev even traces of 2-bromopropene in allene have a negative influence on its polymerization. Other solvents were, therefore, tested when effecting G. G. Gustavson's reaction between 2,3-dibromopropene and zinc dust: di-iso-propyl ether, dioxane, acetonitrile, diethyl formal, butyl acetate, and iso-amyl acetate. The best results were obtained with butyl acetate and iso-amyl acetate, the yield of allene being 95-98%. The examination of the infrared spectrum of allene synthesized by these reagents

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The problem of preparing allene

S/079/61/031/012/003/011
D228/D301

which was photographed on a Hilger H-800 spectrometer, disclosed the absence of any 2-bromopropene and methylacetylene impurities. The authors thus recommend this procedure as a means of obtaining pure allene. There are 1 figure, 1 table and 6 references: 3 Soviet-bloc and 3 non-Soviet-bloc. The references to the English-language publications read as follows: A. T. Blomquist and J. A. Verdol, J. Amer. Chem. Soc. 78, 109 (1956); Z. W. Zinnet and W. H. Avery, J. Chem. Phys. 6, 686 (1938). ✓

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut neftekhimicheskikh protsessov (All-Union Scientific Research Institute of Petrochemical Processes)

SUBMITTED: February 6, 1961

Card 2/2

LABUTIN, Aleksandr Lukich, kand. tekhn. nauk; FEDOROVA, Nina
Stepanovna; SLOBODIN, Ya.K., prof., red.; VASIL'YEV, Yu.A.,
red. izd-va; BELOGUROVA, I.A., tekhn. red.

[Anticorrosive and sealing thiokol compounds] Antikorroziion-
nye i germetiziruiushchie tiokolovye sostavy. Leningrad,
1962. 21 p. (Leningradskii dom nauchno-tekhnicheskoi propa-
gandy. Obmen peredovym opytom. Seriya: Sinteticheskie mate-
rialy, no.4) (MIRA 15:10)

(Rubber, Synthetic)

(Corrosion resistant materials)

LABUTIN, Aleksandr Lukich, kand. tekhn. nauk; FEDOROVA, Nina Stepanovna; SLOBODIN, Ya.M., prof., red.; VASIL'YEV, Yu.A., red.izd-va; BELOGUROVA, I.A., tekhn. red.

[Hermetic seals from rubbers]Germetiki na osnove kau-
chukov; stenogramma lektsii. Leningrad, 1962. 47 p.
(MIRA 15:10)

(Sealing (Technology)) (Rubber, Synthetic)

SLOBODIN, Ya.M.; VOL'PE, L., red.; BARANOVA, L., tekhn. red.

[Elements of the main subgroups of the groups VII-IV of the periodic system; a handbook of inorganic chemistry]
Elementy glavnykh podgrupp VII-IV grupp periodicheskoi sistemy; uchebnoe posobie po neorganicheskoi khimii. Leningrad, Severo-Zapadnyi zaochnyi politekhn. in-t, 1963.
185 p.
(MIRA 17:3)

L 13559-63

EWI(j)/EPF(c)/EWI(m)/BDS PG-1/Pr-1 RM/WW

ACCESSION NR: AP3000706

8/0190/63/005/005/0774/0776

AUTHOR: Slobodin, Ya. M.; Matusevich, N. I.

TITLE: Regularity of polyisobutylene structure

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 5, no. 5, 1963, 774-776

TOPIC TAGS: thermal depolymerization, polyisobutylene, dimers

ABSTRACT: An earlier study of the thermal degradation products of polyisobutylene showed that it undergoes depolymerization along the quaternary carbon-carbon links, with the formation of isobutylene and its low-molecular polymers (from dimers to hexamers) and its other constituents. That study led to the conclusion that the polyisobutylene chain consisted largely of head-to-tail-linked isobutylene molecules. The present investigation of thermal depolymerization was conducted at 325 to 340C, yielding 51% gaseous hydrocarbons and 49% low-molecular liquid products. From these a fraction was obtained with a boiling point of 115 to 167C, representing an intermediate fraction between the dimers and trimers of isobutylene. From it a substance with a melting point of +8C was isolated. This substance proved to be pure diisocrotyl, representing 2.1% of the issuing polyisobutylene, indicating that it contained 2.1% of tail-to-tail isobutylene units. Orig. art. has: 2 formulas and 1 table.

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Northwestern Correspondence Polytechnical Inst.

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SLOBODIN, Ya. M.; KHITROV, A. P.

Thermal dimerization of allene. Zhur. ob. khim. 33 no.1:
153-157 '63. (MIRA 16:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut neftekhimi-
cheskikh protsessov.

(Allene) (Polymerization)

SLOBODIN, Yakov Mikhaylovich; VOL'PE, L., red.

[Elements of the main subgroups of III-0 groups. Elements of the side subgroups of the periodic system; a manual of inorganic chemistry] Elementy glavnykh podgrupp III-0 grupp. Elementy pobochnykh podgrupp periodicheskoi sistemy; uchebnoe posobie po neorganicheskoi khimii. Leningrad, Severo-zapadnyi zaachnyi politekhn. in-t, 1964. 175 p.

(MIRA 18:3)

L 41765-65 EPF(c)/EPR/EWP(j)/EWT(m)/T Pc-4/Pr-4,Ps-4 RM/WW

ACCESSION NR: AP4030374

S/0190/64/006/003/0541/0544

AUTHORS: Slobodin, Ya. M.; Mayorova, V. Ye.; Smirnova, A. M.

TITLE: Thermal decomposition of synthetic ethylene-propylene rubber. 1. C₂ - C₆ hydrocarbons among its thermal decomposition products

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 6, no. 3, 1964, 541-544

TOPIC TAGS: rubber, ethylene propylene, thermal decomposition, fractionation, hydrocarbon

ABSTRACT: Synthetic ethylene-propylene rubber, obtained by copolymerization of equimolar quantities of ethylene and propylene on Ziegler's catalyst, was subjected to thermal decomposition in a Würtz flask to determine the structure of the polymer. The distillation of gaseous products yielded 93.66% of liquid condensate, 5.20% of gas, and 1.14% of residue in the flask. The gas mixture was analyzed by the gas-liquid chromatographic technique, while the liquid part was subjected to fractional distillation. It was found that the gas mixture consisted of ethane and ethylene, propane, propylene, isobutylene, butane and butylene, and butadiene. In the liquid portion, 20 separate fractions were obtained within the 32-100°C temperature range.

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L 41765-65

ACCESSION NR: AP4030374

Other fractions were separated in 50°-temperature intervals, up to 250C. Analysis by gas-liquid chromatography showed the C₅ fraction to consist of n-pentane, pentene-1, 2-methylbutane, 2-methylbutene-1, 2-methylbutene-2, isoprene, and piperilene. The C₆ fraction contained n-hexane, hexene-1, and 2-methylpentane. The authors calculated that in the C₅ fraction the sum of isomers with branched chain was 4.7 times higher than the sum of the ones with a normal chain structure. In the C₆ fraction there was a predominance of hydrocarbons with normal carbon chain. The mechanism of thermal decomposition of ethylene-propylene rubber is linked by the authors to an initial formation of free radicals, which originates at the impact of the residual Ziegler catalyst upon the copolymer. It was concluded that 1) the propylene units in the copolymer are separated by one, two, or three ethylene units; and 2) propylene units directly linked by the tail-to-tail principle may be present in very small amounts. Orig. art. has: 4 tables and 1 formula.

ASSOCIATION: Severo-zapadnyy zaochnyy politekhnicheskii institut (Northwestern Correspondence Polytechnical Institute)

SUBMITTED: 01Apr63

ENCL: 00

SUB CODE: 00

NO REF SOV: 005

OTHER: 008

Card 2/2 CC

SLOBODIN, Ya.M.; BARANOVICH, Z.N.; BOGDANOVA, L.P.

Determining the solubility of gases in liquids. Zav. lab. 30
no.8:972 '64. (MIRA 18:3)

1. Severo-zapadnyy zaachnyy politekhnicheskiiy institut.

OLSHOIN, Ya. I.; GOLIKOV, L. I.

Hydrogenation of dimethylcyclobutanes. Dokl. Akad. Nauk SSSR, 1964, no. 6: 1727-1728. (MIRA 15:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut neftekhimicheskikh proizvodstv.